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What is there in Religion.

By the Rev. Charles W. Gilkey, M.A., B.D. (Barrows Lecturer).

A few years ago I spent a week in the high Alps, at Wengen in Switzerland, close up under one of the famous mountains of the world. The Jungfrau—great cresting wave of ice and snow for ever about to break over the Lauterbrunnen Valley deep below us—dominated our whole life there at Wengen with the silent, mysterious, irresistible authority with which a high mountain always rules the region round it. The very pension in which we lived was called the "Jungfrau-blick"; and from its garden and windows we could watch the great mountain at all hours and in all weathers. There were rainy days that week when the clouds shut in low-roofed and grey as a flat ceiling; we would never have known those days that the Junfrau was there at all, unless we remembered that it was the Alps themselves which had summoned from the blue Mediterranean a hundred and fifty miles away the very clouds that hid them from your sight. One day that week will hardly be forgotten while life lasts: a perfect day, with never a cloud in the infinite blue, and every foot of that jagged crest, clear up to the shining summit, sharp and white against the sky. All the incredible glories of such a day in the Alps, from the cold splendours of the sunrise to the warm pink of the evening afterglow, unrolled like a slow panorama of colour and majesty before our half-incredulous eyes. It seemed almost too beautiful to be real.

One other day that week, almost as vivid in memory, has since come to be even richer in significance. We had gone for a long walk that afternoon, and seated ourselves presently on one of those benches that the Swiss hotelkeepers have provided for their pedestrain guests at commanding points of view. In the interval while our backs had been turned to the mountain, a strange thing had happened. A wreath of mist and cloud had gathered just below the summit, exactly as if the maiden for whom the mountain is named had flung about her neck and shoulders a grey scarf of the finest silk. As the eye ran up from the Lauterbrunnen Valley far beneath across the green fields and darker pines, across the reddish-brown rocks where the grass runs out, and then across the wrinkled, half-dirty glaciers—our view of the mountain stopped short at this silken veil. But higher up, above the cloud, hanging apparently suspended in the sky, shining

white with the sun full on it, was something incredibly beautiful to look upon. It might have been a summer after-noon cloud, huge and soft and white in the sunlight, but certain soon to dissolve ; or it might be the snowy summit of the Jungfrau. Which was it ? For the moment as we sat there our eyes could not tell.

A Symbol of the Age.

As we sat watching that mystery in the sky, it suddenly flashed upon me that before me in symbol was the characteristic question and perplexity of our half-incredulous modern age about religion. Thoughtful men look up at our Christian Faith in a good God Who is our Father, in the immortal life which He has opened before us, in the coming Kingdom of righteousness and peace and joy which is His eternal purpose for His children ; and many of them feel about it all very much as we felt looking up at the Jungfrau that afternoon. Religion is certainly very beautiful as it shines there in our human sky, hanging mysteriously between the heaven above us and the earth beneath us, with all the light of our deepest longings and highest aspirations upon it. We certainly should like to believe it true. But is it really any more than a summer cloud, born of our traditions and habits and hopes, and pretty certain to dissolve and disappear when the clear dry light of our modern science and philosophy have worked on it a little longer ? Or is it really, as it claims, the summit of all human life and experience, where men may actually meet the invisible God above them, and become themselves a part of His Eternal Order and Purpose ? What is there in religion ?

Now, it was plainly no original idea of mine that the high mountains could be of some help to us in answering that question. Long centuries ago a Hebrew poet put the same conviction into words far more memorable than any we can find :—

> Thy loving-kindness, O Jehovah, is in the heavens ;
> Thy faithfullness reacheth unto the skies.
> Thy righteousness is like the mountain of God.

And even more familiar is the somewhat different turn given to a very similar thought in the Psalm cxxv :—

> As the mountains are round about Jerusalem,
> So Jehovah is round about his people
> From this time forth and evermore.

I have wondered often since that day at Wengen just what it was that suggested this great comparison to the Psalmist long ago. What is the precise point of similarity between religion in human experience, and the high mountains, that underlies his magnificent figures of speech ? Was it the silence that is common to both ? Religion at its best never makes a great noise in human life ; neither do the mountains. Or was it their mystery ? The great experiences and faiths of religion are not by any means always clear, even to those who live closest to them ; neither are the mountains. Or was it the authority that, in spite of the mystery and silence, gives the mountains so central a place and so mighty an influence in the life of the region and the people round about them ? Just such a silent,

mysterious, dominating authority has religion always exercised in the lives of men who have once felt its power. Or was it the sense of security, unanalysed but pervasive and controlling, that as the Psalmist explicitly reminds us, steadies and reassures the mountain-dweller and the religious man alike ?

Whatever the insight that first prompted this comparison, it has not been limited to religious thinkers and poets of long ago. When I was a student in Germany in 1909, I came across a German translation of an anonymous article entitled "Credo," that had appeared in the "Hibbert Journal" for April of that Year. I was so impressed by the translation that I hunted up the English original, and copied two or three sentences from it upon a card that I still have, faded and soiled with much loaning and repeated reference. It has since appeared that the author was the editor himself, Principal L. P. Jacks, of Manchester College, Oxford, for whose thoughts on religion our whole Western world has since learned to listen. Here are the memorable sentences upon my card :—

"Religion therefore does not apologise for itself, does not stand on the defensive, does not justify its presence in the world. If theorists would vindicate Religion, they may do so : but Religion comes forth in the majesty of silence, like a mountain amid the lifting mists. All the strong things of the world are its children ; and whatever strength is summoned to its support is the strength which its own spirit has called into being."

We have good precedent therefore, both ancient and modern, both Scriptural and literary, for asking the mountains to help us answer this prevalent and characteristic question of our modern age ; What is there in religion, or to it ?

I. Reality.

There is reality in Religion. Of course, there are hundreds of American tourists who on some crowded travel-bureau schedule have come up from Visp to Zermatt by the morning train, hoping for a glimpse of the Matterhorn. All their lives they have seen pictures—have one hanging in their home perhaps—of that gigantic forefinger of rock, with its fingernail of ice, pointing up into the open heaven. It has been one of the ambitions of their European trip to see the Matterhorn for themselves. But as they leave the train, the clouds are hanging thick over Zermatt., and drifting in wisps among the pine trees close at hand. No Matterhorn anywhere to be seen ! And all day long, as they sit anxious and eager on the hotel verandah or wander up and down the narrow village street, there is never a glimpse of the mountain, and only guesses from pictures and conversation as to where it stands hidden from their sight. The inexorable necessities of an American sight-seeing schedule that is hurrying them through Europe on "one-night stands," drag them sorely disappointed to the afternoon train down the steep valley. Have they seen the Matterhorn ? No. But would they be foolish enough to tell their friends at home that, having been to Zermatt for themselves and seen nothing worthwhile, they had concluded that there is no real basis for all this talk about the Matterhorn ?

Yet otherwise sensible people are continually making a similar snap-judgement about religion. They happen into church some Sunday morning, just to see what

it is like, and find the sermon dull—as it doubtless frequently is—and the service uninteresting—as it must be where there is no spontaneous spirit of worship to quicken it into life. Or they drop a remark or raise a question to some religiously-minded friend, but the ensuing conversation does not find a real trail that leads anywhere. Quite as often, perhaps, there is no pretence of or interest in any personal verification. On the slender basis of some such hasty glimpse or complacent indifference, rests the cocksure comment: "Religion? Nothing to it."

The reality of religion vindicates itself, mysterious and obscure as it often seems at first sight, by three tests strikingly similar to those by which the mountain evidences itself as real. In both cases it is constantly necessary, for one thing, to check present perplexities by past experiences. What finally assured us that afternoon on the Swiss bench that the shining something we saw in the sky was not a summer cloud soon to dissolve, but the mountain's solid summit? Not so much our doubtful eyes, as our clear memories. This day of the long walk to the bench came after the cloudless day, when the outline of the successive crests of the Monch and Eiger and the Jungfrau had fixed itself so vividly upon my memory that I can shut my eyes and see that magnificient sky-line to this very hour. And as on the bench that afternoon I compared that vivid memory with the upper edge of that enigma in the sky, I became slowly sure that it was no summer cloud, but the mountain itself.

Now, there are great moments of insight in religious experience comparable to that perfect day in the mountains. They may be as rare in a lifetime as perfect days are in many Alpine summers; but they are no less real and revealing. They show us where the heights really lie, and which are highest. Religion has its own distinctive names for these unusual experiences; the older phraseology called them conversion, regeneration, sanctification, the second blessing, the baptism of the Spirit; the newer vocabulary speaks of insight, exaltation, mystic union, communion with God. Whatever the terms we use, the common fact of spiritual experience is that most of us have to orient our lives through many dull and even dark days by what we can see clearly only now and then. As Matthew Arnold puts it:—

The tasks in hours of insight willed,
May be in hours of gloom fulfilled.

Hours of Darkness.

But there are many folk to whom these hours of clear religious insight seem not to come—or at least seem to have stopped coming. They hear others telling of their conversion, or of some deep mystical experience in worship or prayer, and complain in all sincerity that they don't understand what it is all about. There remains for them a second test, by which the Jungfrau also evidences herself in the by no means infrequent periods when for long there is no clear day. The Swiss mountaineer can tell us best what this test is. If he were to add up in parallel columns for any month, or at least for any year, the number of days when he sees the high mountains and of days when he does not, there would doubtless often be more in the second column than in the first. But though he may not see the mountain half the time, it is constanly showing itself a dominating fact at a dozen

important points in his daily experience. Its influence is woven into the very texture of his living. The mountain makes his climate, summoning and precipitating the snow and rain that water his garden and the pasture for the flocks. The fame and beauty of the mountain attract visitors from all over the world, who ensure the economic prosperity of his little valley. More than that, the mountain moulds his character. The historic "Cradle of Liberty" is not so truly, as we provincial New Englanders suppose, in Faneuil Hall in Boston, as it is in those Swiss mountain valleys where since the Middle Ages fathers and sons after them have loved their freedom and fought and died to maintain it. The Swiss mountaineer is chiefly sure of the mountain because he lives with it, and finds it a dependable and dominating factor in his daily experience. Just so, in spite of all the mysteries and obscurities which it cannot completely escape or explain, is it with religion. Its best evidence is the stimulating and moulding influence which it can and does bring to bear throughout the whole range of higher human living. It becomes the central and dominating fact of life to him who will really live with it; who, in the language of the Psalms "abides under the shadow of the Almighty."

One other test remains for those who have the patience and determination to to apply it. A man may climb the mountain for himself; and, standing upon its topmost summit, look out upon the world below with that exaltation and exultation which only the man who has reached it ever knows. Just so a man may experience religion in some such conclusive fashion as shall give him the personal assurance of the climber who has himself "been up there." Only, if one is to apply that decisive test of personal experience in either realm, there are some necessary conditions which must first be met. Men do not achieve any of the heights of life without prolonged previous self-discipline. Weak muscles and weak will must first be hardened by patient training in self-mastery. The heart must be strengthened till it can bear its unusual burden upward step by step, in spite of the rarer air, all the way to the summit. The head must be steadied until it can look far down without dizziness and far up without discouragement—a steadiness which, Jesus warned us, is not easily achieved in things spiritual, where most of us fall victims to pride the moment we climb a little way above our fellows, or to little faith when we look up toward God. Nor is this preparatory period of training either easy or short:—

> Let no man think that sudden in a minute
> All is accomplished and the work is done;
> Though with thine earliest dawn thou shouldst begin it,
> Scarce were it ended in thy setting sun.

But to him who will meet these inexorable conditions, the heights of life are accessible on much the same terms as the summits of the Alps.

While we are still thinking of reality in religion, one other point is not without its present-day significance. Suppose a geological expedition were to examine the side valley or shoulder of the mountain, and after careful research with the best technique and highest scholarship available should come back to report that the geological structure and history of that region were somewhat different from what had been previously been supposed. We should all agree that our geological

theories and text-books must be revised to accord with this new knowledge—but we should never fear that anything serious had happened or could happen to the mountain itself. Scientific expeditions will come and go over the mountains for centuries to come, and will revise and correct their text-books and theories times without number: but the mountain itself will outlast them all, summoning its storms and calling its lovers and supporting the dwellers in its shadows down through the generations. Just so is it in religious history and experience. Improved scholarship will continue for centuries to come, as for decades past, to make new discoveries about the authorship of the Pentateuch and the Psalms and the prophets, the history of Christianity and of other religions, the psychological process of religious experience, the evolution of life upon this planet, that may require the frequent revision of our theological text-books and theories. But meanwhile religion itself will continue to grip and bless and sustain the hearts of men, pointing and lifting them up toward God and duty and immortality, with solid ground beneath their feet as they climb. The mountain itself standeth sure, however men's theories about it may change.

II. Power.

But further, there is power in religion. That summer in Switzerland the railway stations were placarded with picturesque posters, calling on the Swiss people to subscribe their savings toward a bond issue to complete the electrification of the railroads. They are in part electrified already. When one rides up the steep valley from Visp to Zermatt to see the Matterhorn, the train slips into motion without a jerk, and slides up the stiffest grades apparently with almost as much ease as it would coast down. The power that drives that train and the scores of other at the same time is "white coal," brought not from a mine but from a dynamo. The dynamo is driven by a mountain stream. The stream gets its energy from the mountain's height, and is itself made up from a thousand trickling rivulets fed by the slow glaciers and the eternal snows. And these in their turn are born in a process over which nature always throws a veil of impenetrable cloud. When it rains or snows on the mountains, we in the valleys below can see the results, but never the process itself—and students of that process soon discover how very easy it is to lose one's way in the veil of mystery that always surrounds it. All that we can see from the valleys is that next morning, when the clouds have cleared, the summits are shining white with new fallen snow, and the streams on every side are brimming with fresh energy. Just so is it with men's communion with God in worship and in prayer. The results are plain to see, even though the process is obscure to trace.

In a sermon that I heard twenty years ago as an undergraduate, the thinker-poet among great American preachers, Dr. George A. Gordon, of Boston pointed out that high mountain ranges may be profitably studied from various and complementary points of approach. The geologist, the botanist, the biologist, the sociologist, the historian, will all find rewarding fields for research in the Alps or the Himalayas. But not the least significant aspect of the mountains is their strange power over the invisible air above them, out of which they draw down the snow

and rain that bring fertility and potential power to all the region round. So is it also, he said, of human nature. We may profitably study the processess of its development, the influence of its environment, the history of its achievements. But not the least significant of its aspects is its strange power over the Invisible above it; its religious capacity to draw down blessing from its contact and communion with the Unseen.

And he might have gone on to point out that the spritual power thus generated in personal religious experience, manifests and applies itself over all the broad areas of human life. The same stream that drives the Swiss dynamos rushes on into the valley to water the gardens and wash the stained garments of the peasants who live there; further still, it supports and makes possible the strenuous progress of the swimmer from bank to bank; lower yet, flowing into the Rhine or the Rhone, it bears up the heavily-laden barges of a national and international commerce; and if the returning American traveller chance to embark at Rotterdam, his ocean liner will steer out into the sunset on the broad bosom of that same widening stream. So the spiritual energy that is created when men meet with God in public worship and in private prayer, flows down across all the continent of human life, bringing power for its tasks, fertility and beauty to its gardens, forgiveness and purification for its sins, support for its heaviest burdens; and when at last we too set sail out of the river into the ocean and toward the sunset, religion bears us up with faith and immortal hope as we voyage over strange seas to the other shore.

III. Adventure.

One other thing there is in religion, the right word for which is not easy to find. It often begins as adventure. Some of us are so constituted that in the mountains we cannot be satisfied to sit too long upon the hotel veranda, or even to loiter along the village street; alpenstock in hand and rucksack on our backs, we, too, must be up and climbing. The spell of the mountains is on us, and will not let us go. But when our daily climbs have taken us up to their higher ranges where the trees and grass run out, and the patches of snow begin, and brooks trickle white from the glaciers, and nearer summits beckon here and there, then adventure becomes discovery. That is the only word for it, when one looks down from some superb prospect upon the huddled houses and the crawling train in the valley far below, and then up above the winding glaciers all around to the snow-crowned summits beyond. It is all a new world. But I notice that a friend of mine who climbed the Matterhorn always uses still another word when he describes what he saw from that summit. He calls that experience a revelation.

So there are many men who venture out upon religion as an heroic adventure of the human spirit, restless and dissatisfied in the comfortable valleys of life, and eager to attempt its higher ranges. But what began as a spiritual adventure becomes then the discovery of a new world around and beyond them, whose wonder they never guessed from the valleys below, and whose power over and within them grows with every experience of it. At first they had thought it was only their own aspiration that urged them upward; but later they found a world of realities around and above them as they climbed, which those never discover who always remain in

the valley. Then it appeared that the urge within which had kept them climbing was the strengthening response of their own souls to this new world of truth and beauty and goodness which is God's own country. And when there they meet with Him, and in His presence look out upon life as He sees it, the word which religion has always used for that ultimate experience is not simply adventure and aspiration, nor even discovery, but *revelation.*

These heights, however, most men do not attain by themselves alone—nor without a guide. They told us in Zermatt that all the serious accidents thereabouts for many years had befallen those who were foolish enough to risk high climbing alone, or in a company of amateurs without an experienced guide. It is not done that way in the mountains—or in religion. We rope ourselves together in the spiritual fellowship of a church, or at the very least in the company of others like-minded, in order that if any slip he may not utterly fall. And when we find a guide who knows the way to the summit, we follow him implicitly.

In the main street of Chamonix under the very shadow of Mont Blanc, stands a monument commemorative of the first ascent of the mountain in 1787. The figure of the Gevenan naturalist De Saussure, is standing erect, looking up the mountain itself ; and one look at his face tells what is in his heart. Beside him bending over with eagerness, one hand pointing the way up, is the guide Jacques Balmat, who in the previous year has made his way to the summit. One who tarries a little beneath the monument can almost hear the guide saying to the naturalist, gripped as the latter plainly is by the grandeur and the challenge of the monarch of the Alps : "Come. I've been up there. I know the way. Follow me, and we'll go up together."

Just so Jesus Christ comes to each one of us, as we catch sight of the heights of life, the presence of God, and the world unseen and eternal, and feel in our deepest souls their challenge and claim upon us. His hand rests in comradeship and encouragement upon our shoulder ; His outstretched arm points out the climbing path ahead, His voice speaks quietly but confidently in our ear : "Come, I've been there. I know the way. Follow me, and we will go together."

The Grama Devathas

By Paul Lawrence, B.A. (Hons.)

Some time ago I had occasion to read Dr. Whitehead's book on *The Village Gods of South India.* Fortunately just while perusing the volume I happened to be in the Telugu country, after having travelled, and studied the habits, customs, and manners of the people in the Tamil land. Of course I myself am a Tamilian, which must be mentioned because most of the following facts are from my own experience and observation. In writing them I have tried to be accurate and impartial, having nothing but a student's interest.

Dr. Whitehead says in his book that "the head of the buffalo is then cut off and placed before the image, with a layer of fat from its entrails smeared over the forehead and face, so as to cover entirely the eyes and nose. The right foreleg is cut off and placed cross-wise in the mouth, some boiled rice is placed upon the fat on the forehead, and on it an earthen-ware lamp, which is kept alight during the whole of the festival. Why the right foreleg should be cut off and placed in the mouth, and what the meaning of it is, I have never been able to discover nor can I conjecture. When I have asked the villagers they only reply, 'It is the custom.' But I found the custom prevailing in all parts of South India, Tamils, Telugus, and Canarese alike, and I have been informed that exactly the same custom prevails in the Southern Marāthā country. It seems to be a very ancient part of the ritual of sacrifice prevailing in South India". [1] Two attempts at interpreting this custom have been made, one by Maharaja Sir V. S. Ranga Rao Bahadur G.C.I.E., C.B.E., in the Asiatic Review for January 1925. "The Lord Bishop wishes to know why the leg of an animal is put cross-wise in its mouth after it has been sacrificed before the village goddess. Among the menial castes of a village there is the practice of a guilty man putting a piece of dry grass cross-wise in his mouth, when he goes to the head of his village to ask his pardon. It denotes that he has committed a wrong act, as a beast. In places where grass is not available, the person in question puts the first finger of his right hand cross-wise in his mouth with the same idea or purpose. Here the animals are sacrificed before the village gods and goddesses by the people in the expectation, or rather with the firm belief, that their sins will be forgiven by those deities, and that their consequences will be thus averted by means of those sacrifices. Instead of putting their fingers in their mouths, as stated before, they put the animal's leg (generally the right leg) cross-wise in its mouth. Though I am not sure that this is the explanation of this practice, I presume that it must be along these lines, as no other ground is traceable". Another explanation is by a Tahsildar: "the practice of putting the right foreleg in the mouth was originally connected with the ceremony, *viz.*, the scene where the offerer stands with folded hands in front of the goddess asking for

[1] Whitehead: *Village Gods of South India*, p.51.

a boon ; and if at that time the mouth of the buffalo opens, he thinks that his prayer has been granted ; otherwise he goes away disappointed, its object being to prevent *rigor mortis* setting in at once, and to keep the mouth open and the jaws twitching, so as to deceive the superstitious" ;[2] which I quote in full for information. It is my humble endeavour to offer an explanation to these from other customs and habits of the people and from the literature and folklore of the country which make references to these.

South India is a land of people with many customs and habits, ranging from those of primitive animism to that of philosophic speculation with its enthroning the supreme as the uncaused causal principle and *kartha*. One need not be long in the midst of the people to realise the fusion of a thousand stages of the development of religion and of experiments in the Spirit world—the attempts made to be in amicable relationship with the extra-physical environment.

Let me begin with the picture of the life of a Hindu to-day (the kind of a man described may not exist, but one will find most of the details in the lives of men in South India). Ramaswamy is born after a great deal of preparations on the part of his parents (especially the mother). The study and the position of the stars at his birth, the religious associations in giving him a name, giving him food (other than that of the mother's milk), dedication on his birth day, boring holes in his ears, cutting the hair, teaching him to read, initiation into the tribe or caste during his adolesence, his membership in it with his manners, duties and privileges, marriage, nuptials, wife's pregnancy, and periods and ceremonies connected with it, worship at the road-side shrine, at the river, at the big local temples, keeping of monthly and annual fasts and feasts, the festivals connected with the seasons, the occasional sacrifices to the village deity, the visits of the family guru, the pilgrimage and penance undertaken to sacred places, renunciation of the world, and his preparation for the life after death. All these are fairly well known to us. In observing these, he conforms to the traditions of his people which gives him a standing in his society and the non-observance of which marks him out specially as a traitor to community, to religion, and to the tribe at large. In this huge array of ceremonies we find some that have been instituted by the Aryans while others were borrowed from the neighbouring tribes among whom it was their lot to live. Eliminating all these purely Aryan (which I must take as established for want of space to discuss here) we can project our minds into the dim past and can picture the inhabitant of the land with his habits, manners and observances. The picture that I have in my mind is that India was a fertile land with big rivers, mountains, and vast plains. The mountains were fairly well filled with wild animals and the plains, especially the fertile river valleys, were dotted with a few who lived in comparatively primitive style with their low huts, nominal dress, and simple food which were perhaps grain, got with very little labour, the rain and the sun doing their part with readiness. Perhaps he had his domesticted dog, which had come to him by fear of other ferocious brothers of the wood and preferred to be content with what he could get by living near man. Besides the dog, in his plentiful leisure perhaps he

[2] Whitehead : *Village Gods of South India*, p. 75.

went into the woods and drove home a herd of wild buffaloes and sheep, tamed and domesticated them gradually and thereby got his milk and meat. I am inclined to believe that sheep and buffaloes were the first to be domisticated after dogs because of their dense lazy nature, and also because the knowledge that the people might have had about the milk that they give to their calves which made them grow. And I am led to think that pigs were also common in those times, by their wandering near the homes of the people at night in search of food, which led to their capture and domestication. With these animals when man lived in the broad plains he found that he had to reckon with snakes and other poisonous creatures, and thinking that they were independent spirits and could be pacified and bribed from harming men, began to pay respects to them. Instead of doing that direct, he poured milk into their holes and associated the snake with fertility and prosperous times. Also he was conscious of the extra-physical especially at night when his life was made miserable by the creeping and crawling poisonous creatures. The Tamil proverb "a devil to a span and a snake to a cubit" expresses the feeling very well. In this kind of existence plenty in the harvest and prosperity in general with their numerous children and an ever growing herd of buffaloes and sheep meant the good will of the spirit world in general, while sickness, famine and death either among animals or men meant the ill-feeling of the spirits that surrounded them. He thought in the same way as he killed and ate the animals when hungry. To keep the spirits in humour he hit on the device of making a contract with them that he would offer so many lives to them if they would not molest or give trouble by making them sick and die. He might have offered one of his own kind, along with one of each kind of animals that attended to his comforts. Then the buffaloes took the prominent part in the sacrifice [3] as it was this animal that was most helpful to man and gave him most of his necessities in the way of supplementing the land produce, milk from which he got curds, butter-milk etc; [4] because of the thought that he was helped by the animal and also because of its size the spirit around would prefer that sacrifice to anything else. As most primitive men consider male members to be more helpful and thereby more welcome, they inferred that the spirit would prefer a male buffalo.[5] Hence the sacrifice of the buffalo began in

[3] G. W. Briggs has an interesting statement in his book on *The Chamars*, which is evidently the result of the thinking of the Chamars about the origin of the buffalo sacrifice. p. 150.

[4] The Todas of the Nilgiris are said to be satisfied with the various forms of the milk of the buffaloes, which are their sole property; their only aim and purpose in life seems to be just taking care of these animals and do everything connected with it with great accuracy. The rituals followed by them have been handed down from posterity.

Among others *Vide* the article on the Todas in *Castes and Tribes of Southern India* by Thurston.

[5] Of course there is also the fact of the part played by the food and sex instincts, which were evidently foremost. The female gave milk and kept up the propagation of the species. The Todas of the Nilgiris however seem to be indifferent about the sex of the sacrificial buffalo, which may perhaps be due to the polyandric system of marriage prevalent among them. Also it is of interest to note the legendary *Kamadenu* literally the cow of desires, meaning the cow that satisfied all the desires of the devotee, This *Kamadenu* is women into many a folk-lore of the Hindus. It is said to be the embodiment of *Dharma*, standing on all the four feet in the golden age, on three in the next, thus going down step by step coming finally to lie on the ground, which is the mark of the heterodoxy of the world and the disregard to *Dharma* according to the Hindus, especially of Manu, with his system of caste and the predominance of the priests. At present the *Kamadenu* is said to be standing just on one leg and that the king of the age, Kali is beating it down, so that the heavenly cow will lie down.

Dravidian circles. Perhaps cows were comparatively unknown to them then. It would seem that cows were introducted into India afterwards or were more difficult to domesticate if they were in Indian forests. They seem to me to be a later introduction into the Dravidian country.

The margosa tree, among others, because of its commonness in the Dravidian country and also because of the little attention that it needs for its growth seems to have attracted his attention. Perhaps its bitter leaves and fruit and the gum that came out when it was cut made him suspect that it was in some way connected with the supernatural around. So he treated the tree as a favourite abode of the spirit and decorated the buffalo at the time of its sacrifice with them, which is being continued even to-day as given by Dr. Whitehead [6].

The Dravidian seems also to have regarded as supernatural the way in which he got children. Already he had wondered about the red colour of the blood and the associations with that colour was life, and things vital to him. The red menstrual discharge of women and their bearing children, coupled with the constant watching of nature around specially in animals, the part played by the female was wonderful and awe-inspiring to him ; and hence he looked upon women and female species in general as a special aspect of fertility[7]. So, he thought of the earth that gave him increase as the female, and the supernatural that surrounded him and even the natural as in fertility was female in sex. Thus the spirit in the margosa was identified with that female deity ; and she got a female name. The diseases prevalent in those times were interpreted as due to her anger, and they sought to propitiate her with sacrifices of animals. They attributed a magical connection to her abode, the margosa tree, and used the leaves as medicine for those diseases. Even to-day the margosa plays a great part in the South Indian daily village life [8]. The leaves are tied to the threshold of homes in times of sickness, the *Karagam* dancer puts it in the *Karagam*, the women put a coating of the paste of the leaf on the wounds of the small-pox patient and put the leaves in the bath of sick people : the oil of the seed is used as medicine in connection with the diseases of children ; and the village magician uses a bunch of the leaves in the performances connected with driving away the evil eye, the nervous shock from fear and mental prostration, and the driving away of devils. Not only are devils driven with these leaves, but the devils' hair, (*i.e.*, the hair of the person who had the devil) is stuck to a margosa tree. Dravidian admiration for the female principle of fertility had gone so far as to influence the doctrine of a whole nation's beliefs in the

[6] Also Briggs : *The Chamars*, pp. 122, 156 and 182.

[7] The example of the cults of Greece and other countries is an analogy to this kind of primitive association.

Hartland in his *Primitive Paterniy* deals with the observances connected with the first appearance of blood in women in most tribes. The occasion is considered to be one of great importance, secrecy, and taboo among primitive tribes The shutting up of the girl for a period of time is attributed to diverse reasons, but it seems to be fairly common that the fear of impregnation, by the agency of the Sun in most cases at least, played a great part in the keeping away of the person.

Briggs in *The Chamars* has references to the blood being looked upon as a charm and menstrual blood in particular, p. 143

[8] This is true in case of North India also as is seen from Briggs in his book on *The Chamars* and other writers.

supernatural. I believe that it was the Dravidian aborginies whe gave the mother principle to Aryan culture. The Kali worship of Bengal (though carried to ridiculous and obscene extremes by the Vamacharis, which is perhaps only the survival of an earlier religious ceremonies in which men and women came together with a view to please the environing spirit) and the cult of female village deities in the Telugu land and South India in general including the Deccan, evidently had a great influence on Aryan culture. The Aryan had always thought of divinity as male. We have a Purusha (male) in the Vedas, all the Vedic deities were male, and it is only in later works that we have the female introduced and also predominating. Though the worship of the village deities is common only among non-Brahman families, the Brahmans also take part by contributions and vows which they perform through the pujaris. Furthermore the ceremony of the marriage of the peepul tree (representing the male) and the margosa tree (representing the female) is very common; I have witnessed such marriages myself; the peepul tree is invested with the sacred thread, when it is about a year old. After some time there is transplanted a margosa tree beside it, and the margosa tree is seen to be taking root and growing; the marriage ceremony is performed with all kinds of mantras, and the peepul tree has six threads invested, just as a twice-born has after his marriage. This represents something more than just a superstitious custom. To me it signifies the fusion of the Aryan and Dravidian culture. Yes! the fusion of such a nature which might be interpreted only by means of the example of the complete union of the marriage. The translation of a story given by Dr. Whitehead in his last chapter seems to signify this fusion, though not perfectiy.

Not only is the tree where the female deity resides married the tree sacred to the Brahmans (the Aryan uses the stocks of the peepul tree, for Homum; I have again and again met people who have refused to cut the peepul trees and margosa trees, just because of the belief they have that the trees have deities living in them); but the goddess also marries the Aryan Rudra (Siva), if she is reputed to be blood thirsty, Vishnu if she is beneficient. These seem to be the far-reaching significances of the acts that are done because it is custom, but originally introduced as a sign of union and fusion of two cultures, and two people.

The *Nagas* (images of snakes) under the peepul tree, also seem to signify a similar fusion of a set of people who lived in the country and who considered the snakes to be supernatural. The Puranas, festivals and folklore connected with the present Hindu rituals and pantheon make us tend to the same conclusion. The earth is spoken of as being guarded by a snake and supported by a snake. It is believed that women who worship the snake will get children; The very names of some people beginning with .the word "Nag" go to prove this. In the Mahabharata Arjuna is said to have married one of the princesses of a people of this name. Bhima is supposed to have gone to their world. Which are just a couple of instances of many a story current among the people of the Deccan and Dravidian India.

Dr. Whitehead says that the washer man takes an active part in the sacrifices in the Telugu country[9]. I have also heard of cases where the washerman did the

[9] Dr. Whitehead: *Village Gods of South India*, pp. 49 and 54.

most disgusting part of putting the entrails round his neck and the liver in his mouth, in connection with the sacrifices to the village deity. His profession of washing and making things bright seems to have a magical connection with the driving away of evil in the neighborhood [10]. His necessity of working alone by the riverside may have some connection. The washerman's wife also very often acts the part of a devil daneer. So also the barber of the village wields an influence over the people, by being present at all important ceremonies connected with the removing of hair, besides attending at sick beds as a physician while his wife officiates as a midwife. This function of the barber also seems to have magical connection in the minds of the people.

The incidents given by Dr. Whitehead [11] of pigs being sacrificed in the most inhuman way, making the cattle pass over the pig buried in the earth with only the head above ground seems to show the idea current at those times and even now among certain people that the pig is a mark of fertility and that it thrives on the fat of the soil. Its accomodating nature, its carelessness, the increase of its tribe by such rapid numbers as even ten at a time, by being so enormous in its offspring made them suspect that there was some connection between it and the welfare of other animals. So when the other animals especially the cattle are attacked by some disease the pig is marked off as a scape-goat and is sacrificed in a most inhuman way, but in a way that seems to justify their growth. The burial of its body underground, signifying its nature of boring, which nature is made clear in the later mythology of India which describes the humane Vishnu as coming down to the earth to destroy an enemy to mankind, and finding that the enemy had retired underground to hide himself, Vishnu takes the form of a pig and bores the ground and goes to the nether world, when he finds the enemy and slays him. The killing of the pig by the trampling of the animals seem to have a magical effect on the cattle in keeping them safe from diseases. Evidently the pigs were used to be sacrificed to certain village goddesses in former times. Even to-day I have come across certain section of Hindus, who use the flesh of the pig as a great delicacy, though the common rule among tne higher castes at any rate is that the flesh of the pig is an improper article for food [12].

The tendency towards asceticism was pretty well prevalent in the days of the compiling of the Aryan Aranyaka. Then asceticism meant to the Indo-Aryan that he was grown old and weak and that his work in the world was finished ; So he retired to a quiet forest glade where he lived in the woods enjoying nature around and trying to commune with the spirit pervading it, for the Indo-Aryan seems to have had a strong vein of pantheism, which is even now vigorously flowing in some

[10] Even now he has some such magical connection in India, in his having to wash the menstrual clothes of women among some people, which wash alone purifies the cloth. Even in cases where the women themselves wash the clothes, it is supposed that the washerman must touch the clothes to make them pure.

[11] Dr. Whitehead : *Village Gods of South India*, pp. 53, 59 and 60.
Briggs also has a reference to the offerings of pigs when children are born among the Chamars *Op. cit.* p, 157.

[12] I understand that garlic and onions are set aside by the priestly classes at any rate and are not used as articles of food, and that there is a description of them as the " pigs of the vegetable kingdom."

of the people. There was nothing in the way of morification connected it, no sense of the feeling of sin and the trying to atone for it by undergoing self imposed tortures. But in Puranic and Medieval India we find all kinds of physical tortures and punishments mentioned. Where did they come from? I am led to believe that they came from the Dravidian heritage as did the idolatry and the localised gods and goddesses which are really the goading elements of the penances and vows undertaken by millions of ignorant devotees, who think that in so doing they will be propitiating these village deities and gaining the particular ends which the devotee has been anxious to accomplish. We have already seen how the primitive Dravidian attributed small-pox, fever and other diseases to the influence or the anger of the village deity. There was only one step needed to get the sequences transposed. As the goddess inflicts punishment to gain her end of giving vent to her anger, if we do the same voluntarily, we will gain her pleasure and good will. This very soon happened when the various devotees to the village spirit of the margosa tree (or a mountain or some specially attractive unusual thing, like a smooth stone) which had grown to a deity, either when they wanted to get rid of an existing physical illness or family calamity, or when they wanted to get something special which their fellows beings did not have. A deity became famous or otherwise according to the coincidence of success or failure of the devotee's attempt. Of course these changes did not evolve in a single day. It was the action of centuries and the work of tens of generations.

In this connection to satisfy the deities, a series of penances and bodily punishments have appeared which are too numerous and too gruesome to relate in full. A few examples will suffice; enough to say that the more a man punishes himself by torturing his body, the more the deity is supposed to be pleased. In South India it is not uncommon to see a man putting *Thoppikkaranam* (தோப்பிக் கரணம்) standing and sitting holding the right ear with the left hand and the left ear with the right hand to a Nag image or Ganesh under a tree; nor is it an uncommon sight to see a man beating his breast or beating his checks *Kannaththarithal* (கன்னத் தாரக்கல்). We see men measuring their persons on the ground in the mid-day sun, on their way to some holy shrine, to the presiding deity of which they have made a vow. I have seen again and again men and women with needles pierced in their tongues, which make them unable to speak, on the way to similar holy places. Men walk on fire and put themselves to unspeakable trouble and torture, as marks of pious devotion [13].

It is to acts like these that we have to look for an explanation of the rituals counected with the sacrifices to the village deity. For though the village deity seems to be so far away from the respectable goddess who presides over large cities, holding sway over thousands of men scattered over a large tract, with high sounding names, good statuary, costly jewels, gigantic temples, yes, often a fine Aryan husband, dignified priests, golden palanquins and crowded festivals, it is potentially the beginnings of all these, the germ from which such holy local deities are resolved. Her very common name, Durga, means a place, hence it might be that the deity was called Durga by the Aryan when they came in contact with this

[13] Abbe Dubois: *Hindu Manners and Customs*, p. 597.

worship first as meaning the spirit of the village (place) deities. In some temples in South India, I think that the descendants of the very pujaris who acted three thousand years ago are acting even to-day. It is seen in their personal appearance, in their nominal Sanskrit, in their degrading habits, in their social position especially when it comes to a matter of inter-dining and inter-marriage. For it is fairly well known that though the religious Brahman eats the *prasad* in the temple, he will not eat in the houses of temple priests nor will be inter-marry with them. Of course there are exceptions, which mostly occur in cases where the temple is of recent origin, or where it has passed through many hands under many kings, but as a rule, I know that even the Brahman who recites the mantras and Vedas in the temples talks of the temple priests' profession as "washing the stone for the sake of the stomach."

Now let us see where we can get the clue for the explanation of the origin of the ceremonies connected with the buffalo sacrifice, and how the Madiga happens to be connected with it to such an extent.

I have not studied enough of Telugu literature to cite from it in connection with this question. Nor are the Telugus students whom I have consulted able to supply me with the information to verify from the Telugu literature what I am going to quote from the Tamil. It is generally accepted that the Tamil branch of the Dravidians was civilized long before their other Dravidian brethren. That may have been due to the more fertile country or to their enterprise which brought them in contact with people outside. Aryans too appear to have settled first in the Tamil land, because of the comparatively advanced condition of the Tamils. These may be the reasons for almost the entire disappearance of the buffalo sacrifice in the Tamil land ; the margosa tree and the ideas connected with it and with the village deities all remain, though they have been connected with less blood-thirsty devotees, with the exception of Mari or Kali, and some of the male attendants like Madurai, Viran and Karuppan to which goats and fowls and sacrificed [14]. In those sacrifices all castes take part, except the Brahman who in many cases is content with just subscribing to the funds of the festival.

A passage describing an attitude of reverence appears again and again in Tamil works. *Kaikatti Vaiputhaithu Ninran* கைகட்டி வாய்புதைத்து நின்றான் stood in the folded hand and closed mouth. I have seen this reverence very often and in certain cases have done it myself as a mark of great reverence and respect. It used to be a common scene to find a field labourer come to his landlord in this posture. The children do it to their parents in the time of devotion. The parents do it when they go to the temple, or to the family priests. The disciple does it to the master and so on. It is also an attitude of penance. The posture is usually assumed this way, a man folds his left hand on his chest, keep it close to his person and closes his month with his right palm. When the superior talks, he answers

[14] These male deities are of later historic origin, arising from the deified leaders of men, who were famous for one or other of their prowess. Also the Perantalus described by Dr, Elmore in his *Dravidian Gods in Modern Hinduism*, come under this head. It appears that the Perantalu worship and the worship of the male deities are only supplementary to the main worship of the Grama Devata.

and then closes his mouth with his palm [15]. After the interview he retires and is free to do whatever he likes with his hands. Some people try to explain this action by saying that the closing of the mouth with the palm is to prevent the man's saliva falling on the man who is spoken to. If that is the reason why should not both the men assume the same attitude or the man assume the attitude to every one whom he is speaking to and on all occasions. This does not seem to be the reason for the action that is so common in the Tamil and Malayalam countries, and to some extent in the Kanarese, and Telugu districts also, especially among the lower and out-castes.

Applying this attitude of reverence, let us try and see whether it will fit in with the buffalo [16] sacrifice. "The buffalo's right foreleg is cut off and placed in its mouth." [17] This right foreleg might correspond to the right palm. Could that be because the man wanted that the buffalo he was sacrificing should assume the most reverential attitude he knew, as he himself would have assumed if he offered his own person? May be in trying to make the beast assume such an attitude the only way he could make him do it was to cut and put it in its month, for there is no other way of keeping it about the mouth. He could not cut the leg and put it earlier for it needed all the four legs to go parading round the streets of the village. Or may it be due to the belief that lurks in the folklore of sacrifice, that at the time of the sacrifice the victim should be perfect in every way? There are a number of folk tales that recount how kings, Brahmans, and other victims were saved, in the nick of time by the discovery that a finger or an ear lobe or some such minute part of the person of the victim was not perfect.

Assuming this that this posture of reverence according to the customs of the people was the reason for cutting the right foreleg and putting into the buffalo's mouth, let us proceed to examine whether we can find the reason or the basis, for the other parts of the ceremony. "A layer of fat from its entrails is smeared over the fore-head and face, so as to cover entirely the eyes and nose." [18] This custom may be to represent a part of the body or the head itself. The fat from the entrails is chosen perhaps on account of the notion among primitive people that the whole body gets its nourishment from the stomach. Putting particles of rice in it may also be explained by stating that it is the source of nourishment. About lighting

[15] M.R.Ry. T. Rajagopala Row Garu, B.A., L.T., M.R.A.S., Madras Christian College, tells me that he has noticed this custom in a modified way, in the Malayalam country. The Malayalees according to him, put their right palm on the mouth as a mark of respect; about the folding of the left hand on the chest, he is not certain whether it is observed or not among them. He also says that some Malayalee servants in Madras observe this form of showing respect to people.

It may be of interest to notice the custom among the Todas: Rev. C. Kofoed Gregerson writes in page 6 of his pamphlet, *The Todas and other tribes of the Nilghiris*: "In the evening when the herd (buffaloes) comes home all the villagers pay a kind of homage to the floor, by bringing up the right hand to the head, the thumb lying along the nose, the hands open and the fingers expanded." Again on page 8 of the same pamphlet he has that "when a male child is born, (among the Todas by the father) to the temple carefully covered in cloth and standing outside the sanctuary, salutes it by raising his hands to his forehead. On page 13, Mr. Gregerson has a third reference to the attitude of the Todas at prayer. "When the Todas pray, they lift the second finger of their right hand up to their face and thus worships."

[16] Briggs in his book *The Chamars* gives many instances where the buffalo is sacrificed by the Chamars in North India.

[17] Dr Whitehead: *Village Gods of South India*, 39, 51, 54, etc., also with sheep or goats, 98.

[18] *Ibid.*, pp 51, 54, 56, 62, 67, 69, 70, etc.

the lamp on the head of the sacrificed buffalo,[19] it is more difficult to conjecture. The fire and light play an important part in fairly primitive tribes, that is among tribes who have known the use of fire. The very waving[20] (*arati*) that the Bishop of Madras has mentioned in *The Village Gods of South India* is fairly common among the tribes of southern and also among the Chamars in North India, besides the great part it plays among the Brahmans in connection with marriage, and other important occasions. *Arati* may be of fire, of rice balls, of kunkuma water, or turmeric water and also of margosa leaves. Just to mention the *arati* of fire, women tofen vow to the deities that they will light so many lamps; or that they will light the particular kinds of lamps; lamps made of flour are common as offerings in temples. The showing of lamps (*deeparathanai* தீபாராதனை) is a prominent part of the daily puja to the gods and goddesses of India. All kinds to lamps have been devised for this purpose. As this ceremony is done by women in the household performances, they have special women to do this in big temples. This is perhaps the beginning of the nautch girls in the temples. In the light of all these facts if we view the primitive village deity as the nucleus of the modern temple, it becames clear that the lighting of the lamp is of a very remote origin, belonging to as remote a time as that of the origin of the village deity itself. If we trace it back to that time the probable origin of the ceremony is evident. The custom is as it was in beginnings,—the whole ceremony takes place at night. To mark off the sacred head of the beast[21] from the others, they may have lighted a lamp; and in the course of a few generations the practice became settled and the original meaning of it was lost. But instead pehaps it took on a magical significance, and in connection with every auspicious ceremony, they adopted this lamp-lighting ceremony, as they took the turmeric and kumkuma of the sacrifice, to mark auspicious occasions. The turmeric root perhaps drew the special attention of the agricultural people because of its bright colour and the people may have used it to paint themselves as certain women do in India now. As the deity was the goddess

[19] Dr. Elmore in page 128 of his book on the *Dravidian Gods in Modern Hinduism* is inclined to believe that "this ceremony is commemorating the supreme humiliation of a feared, despired, and defeated enemy." This does not seem to be probable, from the facts before us, and from the psychological point of view. Socially among the "Hindus" we do not come across a more despised class than the Madigas who keep up this sacrifice and these rituals.

[20] Dr. Whitehead: *Village Gods of South India* pp. 39, 43, 77. 133 and 150. Also refer for North India to Briggs. *The Chamars*, pp. 67, 81 and 90 and 94 and 144

[21] Compare for example what the Todas do with the head of the sacrificed buffalo: for information I give the whole ceremony of the buffalo sacrifice among the Todas as described by the Rev. C. Kofoed-Gregerson in his pamphlet on *The Todas and other tribes of the Nilghiris*, pp. 13, 14: "The Dry funeral is celebrated a year after the death of a Toda. The women will carry the cloth in which the works and skull of the deceased are kept and sing solemn dirges; they then carefully spread the mantle on the ground and seat themselves around it. A number of Todas will appear, and though it may be only a small portion of them who can show real sorrow, yet all, before they sit down will approach the skull, and saluting it, will lament bitterly for the deceased. Forty men will then join hands, and dance round in measured terms to the music of the Kotar people. This over the strongest of the men will proceed up the valley where the herd (buffaloes) is grazing, and selecting some of the animals they will drive them with shouts of joyous exultation into an enclosed area, where the intended victims of sacrifice are kept; a bell is attached to the neck of the each of the animals selected as an offering on this occasion. The buffaloes selected are monsters in size. Some of the young men throw themselves upon the neck of the animal, seize it by its horns and twist their bodies behind the beast, which tries to shake them off and again the victory over its numerous and powerful opponents, who often get severely wounded by this wild animal. The dance will begin again, and a repast of boiled rice and clarified butter are served out on green leaves to all

they gave her the use of turmeric also besides many other things and afterwards gave it a magical connection with the deity itself. The women of India, especially virgins and married women who are not widows, use it in their bath as a sacred duty. They associate a magical sequence with it and when not used, it is said to signify that they are going to become widows. I know a woman, who came home after her bath in the river. As soon as she got to the house when she went in to dress, she shrieked and went back straight way to the river and after another bath came back. I asked her why she did that. She said "when I looked in the minor, because of the barrenness of my complexion, I suddenly realised that I had forgotten to use turmeric in my bath. Since not wearing turmeric is a mark of widowhood and since I want my husband to live, I burried back to the river and took my turmeric bath."

Kumkuma is used in the same way.[22] Evidently the ancient people who sacrificed were in the habit of using the blood of the sacrifice as a charm as the Hebrews did in Egypt. Dr. Whitehead has given instances in his book in which the blood is used. When they wanted to continue the effects of sacrifice even when the supply of the blood of the victim was exhausted, they devised a way to get the desired effect, perhaps from an incident that happened accidentally. They associated the turmeric with the deity because of its attractive colour, and when the same turmeric changed its colour to red when it came in contact with lime, they thought that it was an appropriate substitute for the red blood of the sacrificial victim. At times when there were no sacrifices perhaps they used this mark on their person and even put it on the person of the victims. To-day in all these temples of the village goddesses as well as those of the dignified ones, kumkuma is used to a great extent in the puja offered to the idols, and devotees treasure it as a sacred element (*prasad*)[23]. On all propitious occasions this is used by women and also by men, just as the turmeric is used.

the guests; these funeral feasts are called 'Rodoos.' The bearing and masculine appearance of the men, the groups of women with their long locky hair, the dance, the music and the wild buffalo fight is absolutely the most unique in the world.

The mantle with the relics is then brought out from the temple, and sprinkled with blood from the nostrils of the buffaloes tied up for sacrifice: the buffaloes are then addressed by the relatives as divine animals, beseeching them to use their intercession for blessings to be bestowed on their wives, their children and their herds they may enjoy health and freedom from misfortune. The buffaloes are now brought up before the relics and two milk-men kill them by striking them behind the horns with a wood-cutter's axe. The instant the infuriated animal falls to the ground its eyes, which a moment before were rolling and glaring with rage, immediately become glazed and motionless; it is then dragged still closer to the mantle so that the mouth and nostrils might rest on it. The Todas then sit down face to face and mourn and cry, young and old uniting in one universal lament . . . . The Kotar people then appear on the scene, and and carry away the dead buffaloes, dividing the flesh, hides and horns amongst their friends and themselves."

[22] Dr. Whitehead : *Village Gods of South India*, pp. 37, 50, 55, and 72, 83 and 90 and also Briggs: *The Chamars*—ceremonies where *Sindur* and *Haldi* (the Hindi names for turmeric and kunkuma.)

[23] Dr. Whitehead on page 143 of his book on the *Village Gods of South India* gives a list of places where the sacrificial blood is often applied which correspond exactly to the places where the *kunkuma* is used in connection with the various ceremonies. I quote the passage here for information. "Sometimes the blood is applied to the bodies of the worshippers themselves, to their foreheads and beasts: sometimes, it is sprinkled on the lintel and door parts of the shrine, sometimes on the houses or cattle, sometimes on the boundary stones, sometimes it is mixed with rice and scattered over the streets, or sprinkled all round the boundaries of the village lands."

From these facts it would appear that the time of sacrifice to the deity was a happy occasion in the life of the village, and the families connected with the village, when they came in contact with the spirits around, when their prosperity and happiness was safe-guarded by the deity itself, which covenant was signified by the sacrifice of the animals that they were making. In these cases, why should the victim be worshipped before the sacrifice as observed by Dr. Whitehead ?[24] it could not have been looked upon for the time being as the deity itself. The bride and groom are taken round nowadays to the houses of friends and relatives, in front of whose houses the women come and do waving (*arati*) with the turmeric or kumkuma water, a custom which evidently dates back to the days of the village deities, when the buffalo which was the hero of the occasion, which had been selected as the fit object of sacrifice to the supernatural around as embodied in the village deity, which had been specially fed and looked after all the days from the time of selection, and spirit of which after sacrifice would go and propitiate the spirits around, was received in every house and "*arati*" with water done to him. As the buffalo is dedicated to the deity whose favourite abode is the margosa, naturally he is decorated with the garlands made of these margosa leaves. He is also sprinkled with yellow turmeric which has a magical connection with the supernatural.

Most probably the introduction of a clay image is a later addition in the remote past, when the ideas of the people with regard to their deities shaped themselves more definitely. From that crude worship of the village deity, all the pre-Aryan art and culture had come into existence which influenced, modified, supplemented and in many cases predominated the culture of the conquerors. Any way it may safely be taken as a hypothesis that before the Aryan ever set foot in India, the main elements of the village deity and accompanying rituals were in existence.

In time a particular man or a set of men probably monopolised the ministrations on the occasion of sacrifice. One of them because of trance and such other mysterious mainpulation may have captivated the imagination of the people as is often the case with the priests of primitive tribes. Sometimes he was identified with the deity [25] and to make the function spectacular and more impressive he put the entrails round his neck and the liver in his mouth, and thus identified himself with the deity. This must have been a later growth in the function, for originally the spirit which they were worshipping would naturally have been considered too big and too powerful to be kept in the person of a man. Giving of a public feast or making any section of the people or set of men eat of the sacrificed animal may have come into existence from the belief that the spirits cared most for the spirit of

[24] It is possible that these are survivals of totemistic elements but the evidence of Dr. Whitehead is not convincing.

[25] Dr. Elmore in page 143 of his book on *Dravidian Gods in Modern Hinduism*, has a foot-note (No. 43), saying that the *pujari* is considered for the time being as the incarnation of the goddess.

the animal. Having given the head and also a portion of the fat from its entrails, as signifying the body, why not feast on the leavings of what the spirit has eaten and please it by so doing? Afterwards they may have added a magical significance to the meat offered to the idols and used it as *prasadam* as in the days of Greece. Now this is the custom in the temples all over India—evidently a survival. Once when I asked an old woman why the idol in the village did not eat the food placed before it, she replied "it cares only for the essence and not the matter. God takes the spiritual and leaves the material. We should be glad to eat the leavings of the gods." Dr. Whitehead has argued at length for the totemic origin of the customs in question. As one of the arguments he states that the sacrificial "buffalo is paraded though the village, decked with garlands and smeared with turmeric and kumkuma and then as it passes by the houses, people came out and pour water on its feet and worship it" and wonders why this should be done if the animal sacrificed is regarded as only a gift to the goddess. He suggests that the animal sacrificed was not originally regarded as a gift, but as a member of the totem tribe and the representative of the spirit to be worshipped.

We must also remember that primitive man thought that animals had spirits like his own. If he had thought that killing them would be harmful, as many of the people to-day believe, could be not have tried to pacify it by treating it well as the devotees do in the case of the buffaloes sacrificed? Or could it be that if the buffaloes are treated well, their spirits would speak favourably to the spirit to which the people were sacrificing? I have heard of hill tribes in the Agency tract worshipping the victims, whom they had chosen when human sacrifice was prevalent, for sacrifice in a similar manner. May be it is this idea that all animals have spirits, whose rights must not be overlooked that gave the Aryans at a later date in a more developed form the seeds for the doctrine of transmigration.

But why should the Madiga take such an active part in the ceremonies especially connected with the buffalo? Might it be that in him is the beginnings of the Indian people [26] in the same way that the village deity marks the beginnings of Indian worship, and the village margosa tree the beginnings of South Indian temples and sculpture? The son of the soil or the first settler perhaps, who wanted to live amicably with the extra-physical environment sacrificed many animals, the buffalo being the chief of them; which spirit developed in time to the village goddess claiming her favourite sacrifice of buffaloes in return for which she assumed the guardianship of the settlement and guaranteed plenty and prosperity to her people. When successive invaders came and new people settled in the land, they signified their allegiance to this primitive village deity by taking part in the ceremonies and subscribing to the fund and offerings of the sacrifice, letting the original settler who knew the whims and fancies of the spirit the Madiga,

[26] The Todas of the Nilgiris share in giving a great deal of veneration to the buffalo, with the Madiga. Probably he was also a first dweller in the land, belonging to the west coast branch of the Dravidian race. He might have lost touch with the people of the plains and developed or deteriorated as the case may be, into the modern Toda, preserving in a small measure a type of civilization that would have otherwise died out.

conduct the function [27]. Even when philosophy reigned supreme in the minds of men (in Buddhism, Jainism and Vedantism,) the village deity has gone on assimilating and influencing the majority of men, sometimes in her old name but often with new names and new stories. Thus it may be claimed that the primitive village deity has been the conservative and modifying force in India all these centuries, and the moving spirit of the beginnings of her civilization.

[27] It is interesting to note a similarity of names, which is very suggestive. The Madiga claims that the name of their original progenitor is *Jambudu* (which name Thurston tries to make out as denoting the *Jambavan* of the Ramayana). The Brahmans speak of India in their usual introductory *mantras* as the island of Jambu. *Jambutheba*, etc. Could it be that in his *mantra* the Aryan unconsciously accepted that the land in which he was dwelling was originally the land of the present Madiga if their claim to be the children of Jambu, who was perhaps their King. The Madigas call themselves the people belonging to the big house (*pedda inti varamu.* పెద్ద ఇంటి వారము), which statement of their tradition, perhaps preserves for us the dignity of their original progenitor.

The Progress of Natural Science.

By D. W. Devanesan, M.A., Ph. D.,

A historical survey of the rise and onward progress of this science will lead us into a vast domain of knowledge which it is not our purpose to traverse. The object of this paper is just to take an aerial view, to note the perspective and to conceive of the whole within the outline thereof.

If we commence our narrative from the time of Linnaeus, *viz.*, the latter half of the eighteenth century, it may constitute a proper and a suitable starting point. Carl Linnaeus (1707--1778), a Swedish botanist, introduced a system of naming living things which was of immense value at a time when there were several instances of one and the same plant or animal being known to naturalists, perhaps, by half-a-dozen different names. This was a source of no little confusion ; and thanks to the *Systema Naturae* of Linnaeus, it was obviated and nomenclature was laid on a safe and clear basis. To each animal or plant, Linnaeus gave two names, one Greek and the other Latin. The Greek one, he said, was generic or denoted the genus or group of races to which the particular individual has been assigned ; the other was specific, it indicated the species or the race to which it belonged. Thus the lion was named by him *felis leo*, the tiger, *felis tigris* and the leopard, *felis pardus* which indicated that these three animals belonged to the same genus *felis* while each was a distinct species.

However, neither the fauna nor the flora dealt with by Linnaeus could have been comprehensive at that time nor, for that matter at any time, as every year animals and plants, new to science, are discovered. A continuation of Linnaean work was, therefore, inevitable, nay, a permanent necessity. This piece of work is continued by a section of biologists known as ' systematists.'

Perhaps, the reader will like to know on what basis a systematist works. A brief account of it may suffice. If he is dealing with a bird never known to ornithologists before, he counts the number of quills in its wings and tail, he notes the shape of certain feathers, he sets down the tracts which are featherless or feathered and he marks the peculiarities in its colour-scheme, to say nothing of certain internal structural characters which he takes into account. In a word, he describes it as a species new to ornithology under two names, one Greek and the other Latin. It may not seldom happen that his new species had been already described by another before him but under a different name. When this is discovered, its name is replaced by that of the older date.

On the other hand, if a systematist is concerned with a new snake, he likewise, counts the number of scales across its body, he studies the shape and size of the specialised scales or shields on its head, the number of scales on the upper and of those on the lower lip. He gives this reptile similarly two names and presents it to herpetologists. Lieutenant-Colonel Wall, I.M.S., has brought to light several new species of snakes within the boundaries of our own country.

But I would not let the reader conceive of the systematist as a mere coiner and counter of new species. With him has been and still is associated the philosophy of natural science. One has only to recall to mind, names like Charles Darwin, Russell Wallace and Bates. The theory of evolution by natural selection we owe to a systematic study of living things with reference to their variations and geographical distribution made by the first two naturalists. Therefore, the real genesis of natural science and the philosophy thereof was caused and was propounded for the first time by members of the school of systematists. Nevertheless, one must remember that systematic zoology or botany is but an avenue which led and leads to fresh fields and pastures new, not a end in itself, as indeed nothing can be in science.

For this reason several naturalists turned their attention from coming and calculating new species to structural details. In a word, morphology became a favourite theme with the result that several differences came to be discerned at once between such low microscopic forms since called 'protophytes' or primitive plants and 'protozoans' likewise microscopic but of the nature of animals. In consequence of this first cleavage, biologists separated into zoologists and botanists. A rich harvest was reaped in understanding the delicate organisation of such higher animals as the worms, echinoderms, insects and so forth.

During the last four or five decades of the nineteenth century, a great advance was made in the manufacture of optical instruments. Thenceforth, small organisms which would not or could not yield the secrets of their structure to the scalpel or the pair of scissors of the dissector were subjected to the penetrating sharp magnification of lenses and objectives of microscopes. The effect was in several cases bewildering while in others astonishing. A new group of *animalculae* known as unicellular organisms—protozoans and protophytes—swam into the ken of the microscopists. The study of these organisms, otherwise called 'bacteria' awakened widespread interest. The rudiments of bacteriology came into being which was destined to become an invaluable adjunct to the science of medicine.

To the same microscopes is due our knowledge of the early development of animals. This formed a new field of science known as embryology, Though not adequately appreciated now, this branch of zoology during the last decade of the last century contributed not a few facts and data which tended towards not only clarifying but also correcting our views of affinities of several co-related groups. This vast mine of embryology is, in India, still unexplored.

When we turn to survey the progress of natural science during the first two decades of this century, we find the task neither small nor easy. For biology had, by a process of division and sub-division, resolved itself into several departments of study every one of which has attained a position of no mean significance or of little importance.

The discovery that all tissues of organisms consist of microscopical units termed 'cells' was, made as the reader may know, by two Germans—Schleiden and Schwann in the nineteenth century in the year 1838. The latter also discovered that a single cell was the initial body of an organism composed of millions of cells

On these discoveries, the biologists aforesaid based a theory known as 'the cell-theory' which declared that all organisms, animal and plant were built of units termed 'cells'? and that cell was composed of a small mass of protoplasm including within it a body called 'the nucleus'. Much time was spent in verification of this theory and a period of philosophical thought ensued after morphological facts had been viewed in the light of the same theory.

It was not until the beginning of this century, however, that an exclusive as well as an intensive study of the cells themselves was begun. The investigation became known as 'cytology' and the men who were engaged in it were called 'cytologists.' The cell which was designated 'the physical basis of life' by Huxley is being critically examined with all the primary and accessory appliances of the modern microscope. So far the facts brought to light and the hypotheses springing therefrom have been amazing though not convincing. Certain it is however that cytology bids fair to be a favourite mine of the future for research on life. The minute structure of cytoplasm or protoplasm together with that of its inclusions such as 'the nucleus' and 'the centrosome' is being investigated. Various methods of colouring the cell both when it is live and dead have been discovered or invented which to a large extent facilitate the research.

But the problem of life and all the forces correlated thereto were not to be solved and explained by an examination of the structure and nature of 'cells' which have been previously killed by treating them with fixatives or preserving media. It grew upon the cytologists slowly but steadily that they were studying death instead of life. Consequently, they set about to devise methods to dissect microscopically live 'cells.' Thanks to their invention, the actual observation of living protoplasm has been made possible in our own life-time. The apparatus which is employed for this purpose known technically as 'microdissection' consists mainly of extremely fine and pointed glass needles held under the lens or objective of a microscope. The could be manipulated in three directions. The living 'cell' is dissected with these needles; but 'the cell' so treated very soon deteriorates. Micro-dissectionists have, nevertheless, brought to light several properties of living cytoplasm.

This century has also seen the advent of the Geneticists. Now what is Genetics? Genetics constitute a study of the laws of heredity by which parental or ancestral characters are transmitted consecutively from parents to their offspring. This section of biology is an ancient one, but, as a subject of scientific study, it came into being only at the beginning of this century, from seeds sown during the last century by an Austrian monk called Gregor Mendel who lived in the now modern state of Czecho-Slovakia, by Francis Galton a cousin of Darwin, and by August Weissman, a German.

So far-reaching has been the effect of Mendel's discoveries that a brief historical account thereof will not be uninteresting. This Austrian recluse carried out several experiments on hybridisation and he chose for his subject the common pea (*pisum sativum.*) The discoveries he made did not receive during his life time the attention they merited and sad to say, were subsequently forgotten.

In the year 1901, Hugo de Vries a Dutchman published his book on 'the mutation theory.' He worked on a certain plant, since become classical, to wit the evening primrose of English gardens. He found that from the seeds of one of these plants, there arose suddenly new varieties by quick stages or mutations. His discovery was a challenge to the old Darwinian theory of gradual evolution by imperceptible variations. Bateson in England who was likewise concerned with genetics now joined forces with De Vries in Holland. It was at this time that the work of Gregor Mendel happened to be found and was subsequently made known to the world by these two scientists. The fact that Mendel had anticipated their conclusions was openly acknowledged. In honour of the original propounder, their hypothesis was designated 'Mendelism.' Besides Bateson and De Vries, other workers both in Europe and America have worked and are working on the same subject. Not a day passes but some new fact relative to Mendelism is brought to light.

Mendel's discovery may be very briefly explained with reference to a small experiment he made. He took a tall race of peas with coloured flowers and crossed it with a short race with white flowers. The plants raised from the seeds thus produced were all tall and yielded coloured flowers. This generation is called for the sake of brevity F_1. He collected the seeds of F, and sowed them the plants raised segregated into two groups—one of tall ones and the other short ones. For every twelve tall plants there were four short ones. That is to say, the proportion of tall to short in this generation (F_2) was as 12 : 4. Of the twelve tall plants nine yielded coloured flowers and three white ones. Of the four short plants, three brought forth coloured blossoms and one white. The following diagram may render the experiment clearer.

Tall race of peas with coloured flowers.
×
Short race of peas with white flowers.
↓
F_1—tall with coloured flowers.
↓
F_2—12 tall : 4 short or
9 tall coloured : 3 tall white : : 3 short coloured : 1 short white.

Mendel declared that it was a case where a redistribution of characters took place. But he was unable to say what carried these characters in the seed or germ-cell. This revelation was reserved for an American cytologist, Thomas Hunt Morgan. Before him, his fellow-workers had discovered in the nucleus certain self-perpetuating bodies known as chromosomes. The number of these was constant in the nucleus of the tissue or germ cells of any one species of animal or plant. The behaviour of these bodies, during the maturation of the germ-cells—the ova and the speramatoza—and subsequently in fertilisation or the union of a spermatozoon with an ovum had aroused in the mind of many a biologist the

suspicion that these chromosomes might be the bearers of hereditary characters. But Morgan it was who went further and showed that the proportion of assortment of these characters bore a definite relation to the number, the shape, and the behaviour of certain particular chromosomes. In other words, geneticists were asked to behold through the microscope the very particles of matter or factors, as they are called, which carried the qualities of the father and mother and redistributed them in their offspring by themselves undergoing a different permutation and combination. Nothing so stupendous in scientific investigations has happened before in the annals of natural science.

The faithful followers of Darwin, however, have formed themselves into an opposite camp and are stoutly resisting the theory of mutation or Mendelism as a satisfactory account of evolution. Foremost among these are savants like MacBride and Kammerer. One of the dogmas or postulates of the mutationist is that acquired characters can not be transmitted by parents to their offspring. Darwin, while far from dismissing this idea introduced by Lamarck, incorporated it into his theory of natural selection by admitting that useful characters or variations tend to be inherited. To the mutationist who holds that species can arise by special jumps caused by a redistribution or assortment of prominent characters in the offspring, the acceptance of the inheritance of slight though useful variations will be suicidal. He, therefore, refuses to have anything to do with it.

We in India, are content to be the happy listeners and spectators of all these stirring events past and present, I have endeavoured to depict in this small article. But I hope that the day is coming when we also shall make our contribution to the stock of human ideas and help the world in its thirst for progress and revelation. The citadel of nature is now being besieged by savants and scientists alike ; at the door of life grows, day by day, louder and louder, the knock. Some time, in the distant future, nature, now coy and unwilling, may, who knows, reveal more, if not all, of her secrets ?

The Psychology of Learning through Purposes.

By C. W. Miller, M.A., Ph. D.

The first thing we would ask about any given method of class room procedure is, 'Does it work?' But the matter is not so simple as the question. If I go into a school and find the little tots all arranged about one a little larger than themselves repeating in high-pitched unison the tables which the older child calls out, I could truthfully say, "Yes, this procedure does work, the children are learning their tables." And I could from time to time test certain of the children and could find out that they were learning, some faster than others, but probably all could show some progress in this learning. But before I would come to my reasoned conclusion about my observation, I would want to ask three other questions : 1. How does it work? 2. Does it work as well as it might? 3. Granting that it does work, do I want to use it? The first two questions are for pscbology to answer. How does it work? What are the circumstances and conditions under which this learning takes place? What are the conditions essential to note to start the process going in another school? What is there in the mind of the child which responds to these conditions when arranged, and produces a change which can be observed and measured? What are the laws under which such changes take place? Does it work as well as it might? If I rearrange some of the conditions, say if I substitute a teacher for the older child or a set of printed tables to be learned by the eye instead of the ear, will the tables be more quickly and permanently learned? (There is of course, a larger and most important aspect of the question in which psychology is concerned ; namely, what effect does the learning in this connection have upon the other learning which the child is doing and the future possibilities of learning which are open to the child. This we shall leave for consideration elsewhere). The third question, however, belongs to the philosophy of education with which we are truly much concerned in our discussions here but which must be clearly recognised as being outside of the purely psychological consideration. Granted that this educational procedure does work, do I want to use it? In the first place is it necessary that the child learn his tables? This manner of question has a very practical bearing. For instance we probably would most of us agree on this question, but is it necesssary for the average village child to be taught the metric system of weights and measures? To this our philosophy of education would find a working answer by the survey of the actual place of the proposed learning in the life of society and in the life of the children. Problems have actually been found in arithmetic text books of the present day referring to practices in the business world discontinued fifty years ago. Our philosophy of education would determine also how much time relatively this matter of learning tables should occupy in relation to the other things which children ought to accomplish in school. So too the relation of this learning to other learning in developing character, culture, efficiency, and social living. A relatively new science, Educational Sociology, will undoubtedly be a help in giving us the

scientific data from the standpoint of the growth of society. But it is our philosophy, our way of looking at life, which will finally determine what shall go into our educational scheme. Germany before the war had a most efficient educational machine for carrying out the German philosophy of government, and appropriate methods were used accordingly. The great mass of people were so indoctrinated with the notion of "Deutchland Ueber Alles" and the Fatherhood of the Kaiser that the call for war found them in unquestioned obedience. Now if our philosophy is of such a stamp, we have a psychology which will enable us to produce the type of men we want. But if our philosophy has a different standard, if we decide that it is character and personality as well as social co-operation which we wish to build in our future citizens, then too psychology may show us the way to do it. We cannot hold psychology responsible for our standards. On the other hand psychology may help us to define more clearly accepted procedure in the school and thus help us to decide whether we want to continue to use them.

Look into the school rooms with which you are acquainted and examine the several types of educational procedure you may find there. You will find some of the work going on at the level of 'You get the lesson, and I'll see whether you have it. If you don't, look out.' You will again find teachers who use the utmost pains to prepare the lesson so that it may be palatable for the children. This is work on another level. Again you will find co-operation between teacher and pupil in the work of the class, the teacher helping the pupils plan their work and guiding their own interests. This is still another level. So we might conceive a scale of school activities, those done under rigid compulsion at the bottom of the scale and those utilizing the earnest purposes of the children at the top Upon which level a teacher will propose to conduct his class will be decided first by his philosophy, and he will use his psychology accordingly.

I think it will be readily admitted upon examination that the element of purpose on the part of the pupils themselver scarcely enters into our school procedure at all. It may be that the psychology of working on this level is little understood and that when it is better understood, we may be willing to change our philosophy at least to admit of a trial. When you come to think of it, it is curious that we should admit purpose so little into the school-room, when it is so characteristic of worthwhile activities outside.

I watched a fisherman along the shore. The tall straight form, the well-tuned muscles, seemed perpectly adapted to a purpose. Over his arm hung a net carefully made and arranged with a view to quick throwing over the prey. Over his shoulder hung the basket in which the fish should be placed. Silently he walked along the shore, his eyes scanning every ripple on the water. Suddenly he stopped, bent forward, and looked where I could see nothing. He stepped alertly and quietly through the water and again stopped, watching, his body bent as if for a spring for instant action. In a flash the net flies out in perfect circle as if by magic and settles into the water. The fisherman waits and circles his catch and draws in his net and the fish are deposited in the bag. Here is a typical purposeful act. Is there a psychology to describe it?

In the course of life's activity a pressing need is felt.

1. There is the need of the fisherman himself and his family for the fish as food or for the money which the sale of the fish would bring.

A purpose arises. Mechanisms are in readiness to act.

2. On this particular day, after years of training from boyhood in this occupation, the need for fish being pressing the fisherman prepares for his task. All the foresight and skill which he has developed from experience is ready for the work.

Mind-set-to-an-end.

3. The net is examined and prepared if necessary. The basket is ready. The sun is watched for the proper hour. Speculations arise as to probability of a good day's catch.

Planning. Anticipation increases the readinesses. All the mechanisms connected with the catching of the fish are brought into play.

4. Having started in search for his prey, he sees a school of fish making their way along the shore. He pursues, comes up on the fish, bends forward and skilfully flings his net. He watches the net settle and deftly brings in the fish.

Consummatory reaction.

5. The fish are deposited in the bag with a satisfaction of having accomplished this much in the provison of the day's needs.

It might be will to describe this act very much more in detail, if we would see more clearly the psychology of it. To do so would involve a much longer excursion into the neurological basis than I judge we are now prepared to go. Briefly, what we here outwardly describe in terms of observable behaviour is in reality a highly complicated series of reactions in the neural machinery, the physiology of which has been studied just as the physiology of other parts of the body machinery by which sneezing, for instance, takes place, would be called the sneezing mechanism. In this fairly simple case, the sensation received, say of pepper in the nerve end fibres of a sensory neurone in the nose, would be conducted along the nerve fibre to the brain where it ends in a branching system which forms a junction with similar branching which are the receiving ends of the motor neurones which end in the muscles.

The disturbance started by the pepper sensation is communicated to the muscles through this junctions or synapses and produces the contraction we call sneezing. This is a reflex mechanism, one with which we are born and there are many such ; but we also acquire mechanisms until there are as many different mechanisms as there are specific things we can do. There are mechanisms for walking, for stooping, for flinging the net, for picking up the fish. There are also the mechanisms for thinking of the time of day, the value of the catch, etc. It is apparent that there is some sort of energy ready in the receiving neurones whereby the mechanism wakes up, gets to work. If we do not apply the analogy[1] too far, we may describe the mechanism as a sort of living gun which automatically loads itself after each discharge. The stimulation which is received is the spark

(1) Adapted from a description by Professor Kirpatrick.

from the percussion cap ; the energy which is awakened or let loose is the powder going off ; the mechanism in action is the gun performing the movements for which it was made. We have a special term to describe the mechanism in action : we say that the mechanism is "in drive", that is to say a drive got into the mechanism or was communicated to the mechanism.

To return to our fisherman, it is evident he has any number of mechanisms through which the actions of catching fish may be accomplished. These are not all in drive at once. They come in succession, each as needed in its place towards the concluding or consummatory reactions. In common speech we say the fisherman has bent all his energies to the end in view ; or we say that he has accomplished his purpose. This end-in-view, the purpose, particularly interests us for we see that as it arises, the mechanisms needed for the accomplisnment are ready to go into drive. The anticipation of catching the fish, meeting the needs for food and money, seems to furnish the stimulation which get all the mechanisms necessary for the catching of the fish into drive. Thus a determination or purpose becomes fixed. This we call mind-set-to-an-end. It would be difficult at a certain point in this fisherman's activity to persuade him to do anything else. His mind is set. There is another condition which we may examine psychologically. The mechanisms connected with the catching of fish were all ready to go into drive. They were ready to perform their separate functions when needed. We can note this condition of affairs better if we examine a circumstance when the mechanisms are not in such readiness. Suppose, weary with the day's labour, the fisherman lies down to rest and his friend comes along and says, "Simon, I go a-fishing." He will be likely to say, "Well, go along, I'm done for to-day." And if his friend says, "Oh, come along anyway," it may be he will go, but until he makes the purpose to fish his own, it will not be easy to communicate a drive to his mechanisms connected with fishing. We call the state or condition of a mechanism wherein it is more easily put in drive, readiness.

I have chosen the example of the fisherman because it represents a more primitive purpose, connected as it is with food-getting. The fisherman's reaction were learned in close connection with this fundamental purpose. There is a history of the fisherman's own gradually increasing skill in his occupation. As a boy he carried the fisherman's basket, learned to note the presence of fish, and from time to time practised the throwing of the net. There is also the history of the occupation of catching fish, the 'race inheritance,' the methods and materials which the fisherman inherits from his fathers which make it easier to enter the occupation than otherwise. The method of twisting strings and weaving the net, the traditions about the best times of fishing, the names, and suitability for eating of the various kinds of fish, these things enter into the race inheritance, solutions of problems met long ago and passed on, which are now utilised by the fisherman in connection with his own purposes to fish successfully.

But we are interested in children and schools. Up to the time the young child enters school and in out-of-school life, he lives pretty close to currents of life which have meaning for him and in which he finds needs and urges arising where-

by his own purposes to do something or to know something have their birth and consummation. In my neighborhood, a typical instance of such out-of-school activity is the making and flying of kites. Here is our boy who sees the wonderful creations soaring and humming in the air and is possessed by a great longing to have a kite. I do not suppose that one of us has escaped that longing. We know how urgent it becomes. Nothing will do, but the boy must have a kite. It is really a wonder that kites are not sold ready-made in the bazaars; but fortunately for our boy the longing cannot be gratified without real effort and learning on his part. He begs to look at a kite; he may watch one being made; he may ask for the help of his older brother. He, himself, is the prime mover in this affair. He sees to it the sticks are made ready, that the coloured paper is bought at the caddy, that the cord is ready. Probably, if he makes the first kite alone, it is a failure; but what boy will allow himself to be stumped when the other boys are making a success of this business? No, his own urge for that kite and the approval or disapproval of his chums decree that the kite shall be made and that it shall fly. I need not describe the consummatory reaction. You yourselves can feel even yet the joy of that thing of life and beauty tugging at the end of the cord which you hold, and of which you are master. I will leave you also to apply the more detailed psychological analyses of the beginning and completion of the act.

Our child must go to school. What for, we can decide at another time. But schools are institutions organized by society to-to-(but I am not the one to tell you what they are for) to which we must send our children. How far may children carry from their home and out-of-school life the character of living which is illustrated by the above developing and completing of an act?

This time our pupil is a girl. One thing a girl must know, even if she knows little else is sewing. An enlightened society has decreed it. Experts have carefully worked out a scheme and embodied it in an educational code. The youngest child at the time she finishes the first standard must be able to sew a handkerchief with fine even stitches. Every child in every grade must be able to sew and finish a garment or useful article, and to show that she is acquainted with an essential part of the process. Everything seems to be well arranged, and by all counts our schools should be turning out accomplished seamstresses.

Our girl comes to the fourth standard, we will say. This year we must make a jacket, the teacher announces. The girl already knows this. She knows that once a year the inspectress comes along and that the teacher is going to get her (and all the other girls) ready to show the inspectress that she has made a jacket and can do on a little piece of cloth the kind of sewing she has done on the jacket. The jacket is cut out by the teacher and the girl sews it under the teacher's direction. She also practises on pieces of cloth the stitches she needs to use. The inspection day comes, the garment is shown and passed and the sample sewing done by the girl is pronounced satisfactory and the girl is passed in needlework for the fourth standard. She is pleased, her parents are pleased, the teacher is pleased, the inspectress is pleased. Everybody is happy. Education is said to have proceeded forward a step, and so it has,—on a certain level. Under the

urging of the teacher and the stimulus of meeting the requirements of the inspectress a certain amount of sewing skill has been acquired which can be seen and measured. But what is the school for? Would it be fair to propose another test of the sewing skill acquired? How much farther along did this experience carry the girl in her life in the home and relation to others? How much interested is she in making more jackets and in keeping the family clothes in order? How does this sewing experience get into life? I have been at pains to make careful inquiries on this point and have observed the system at work in the schools. The report of the inspectress of sewing is to the point. She says that sewing-skills do not seem to be carried over much into home and village life. Girls who can sew well in school make no use of it at home. A prominent citizen of Jaffna said plainly that even after our girls finish all the sewing practice which they get in eight standards of a boarding school, the tailor has to called in to make the garments for the children. One of the most respected ladies in Jaffna secured the services of a sewing girl whose record in the school examinations she knew was excellent. The work done for the lady was very inferior. "Why is it that you can do such excellent work in the examinations, but do such poor work for me the girl was asked. She could not tell for her standard of work was related to the examination and not to the requirements of the work in hand. She had been taught her sewing, she had acquired skill in the process, she could pass a high standard in government inspection. But the method of her education was on the level we are all familiar with. Is there another level on which educative experiences can be undergone which will leave our girl in a more satisfactory position when she leaves school. There is and the psychology of the method used is that of the whole-hearted purposeful act which we have been examining in certain typical acts in life, the fisherman at his work, and the boy making the kite.

Shall we look into the possibilities of educating on this level? I shall illustrate from my own experiences with the method used during the past year in a girls' school. I do this making no special claims of success, for one cannot change quickly ingrained habits of thinking and acting on the part of pupils and teachers in an institution. I shall take up the subject of sewing to compare with our discussion in the last paragraph. The first thing to do was to free the teachers and pupils from the fear of and subserviency to the Government standard and inspection. But so ingrained was the habit of thinking in terms of external requirements rather than the worth of the sewing work itself that we were not wholly successful even after many months of work. However, the teachers grasped to some extent two important principles:

(*a*) Teach nothing that is not immediately related to the children's interests.

(*b*) Make the fullest possible use in the work of the class of things the children want to do and know.

It would seem that the need for clothing was so fundamental in human life that purposes for the supplying of that need should easily and frequently arise in the lives of individuals. Furthermore, it would seem possible that life in a school together might supply situations in which the need would be felt and the consequent purposes brought under educative guidance, which is of course a possible level of

What is the psychology back of these simultaneous learnings? A separate article is required to describe this adequately. In any given situation there are actually several or many stimuli, and the human organism is so constituted that several or many responses may be made simultaneously to these stimuli. In the school-room procedure the pupils are actually engaged in making multiple responses to the multiple stimuli of their environment. Some of these stimuli occupy the focus of attention, and have to do with the primary learnings which have hitherto occupied most of our consideration as teachers. But there are other stimuli in the margin of attention which are calling for responses, and the teacher is responsible for these as well. The worth whileness of any school-room procedure is immeasurably increased by joining up the primary learning of responses pertinent to the relation of that learning to other things which have already been learned and might be learned. The area over which the learning spreads is significant both in the satisfactoriness of the learning now going on and in the possibilities of future learning, the Associative Learning. Concomitant learning is a by-product of school-activity. It cannot be aimed at directly, but it is always there and must be estimated by the true teacher. Will-nilly, some kind of habits are being developed, some attitudes are being strengthened, some appreciation of the good and beautiful or satisfaction in falsehood and evasion is being formed. It will be noted that the possible concomitants of a given school procedure can be sought out and some light thrown thereby on the education for character. Teaching no the level of whole hearted purposeful activity, then would appear to increase the number of desirable associative and concomitant learnings. I have ventured to state that the number of primary learnings would be larger. Possibly I would need to justify this for the sake of some who are still unfamiliar with the laws of learning.

I showed how to the organism functioned in the performance of a complete act, 'and how the mechanisms required for the accomplishment of a purpose got into 'drive" as required for the persistent directed action towards the desired end. This state of readiness of a number of mechanisms is called mind-set. The principle as stated by Thorndike is: "Any process of learning is conditioned by the mind's set at the time." It remains to state as briefly as possible the application of the other important laws of learning with respect to any particular response which it is desired that the organism should learn or strengthen. The Law of Readiness we have already indicated in our discussions more or less implicitly. When a bond (that is a conduction unit in the nervous system whereby a given response, is desired such as sewing a button-hole in a dress or the answer 24 to 6 x 4) is ready to act, to act gives satisfaction and not to act gives annoyance; when a bond is not ready to act, to be forced to act gives annoyance. The teachers found their sewing work easier because all the bonds involved in each pupil's sewing were ready to act. The work went along more smoothly and more quickly in spite of the increased amount done and the variety of work undertaken in each class.

The Law of Effect: When a modifiable bond acts, it is strengthened if satisfaction and success attend its exercise; it is weakened if failure and annoyance attend its exercise. If you think of a bond as a habit reduced to lowest terms,

it may be helpful to think of this law in terms of the well-known laws of habit formation. In respect to our analysis of the utilisation of this law in the school-procedure referred to, we may call attention to the facts that since the pupils' own purposes were involved, the bonds whose action moved them nearer the end-in-view, such as the completion of a hem or the making of a button-hole, were strengthened both individually as separate bonds in the successive successes and as a system of bonds working together by the resulting satisfaction of the completed purpose. Also, there was a greater number of such successes possible throught the completion of more projects. Also the satisfactions ensuing were intrinsic ; they had to do with the value of the work itself to the pupil and did not come merely because the requirements of others were met.

The Law of Exercise : When a given stimulus arouses a certain response the connection between the stimulus and that response is strenthened by the exercise so obtained. This is merely another statement of the ancient rule-o-thumb, ' Practice makes perfect ' Conversely, the law tells us a connection is weakened by disuse. The law of exercise in the example of whole-hearted activity we are considering was utilised in the greater practice afforded through the incentive to make not one but many things. Also the practice thus afforded, owing to its connection with the children's real lives, was likely to be continued in the out of school situation.

There are other laws necessary for a full explanation of the facts of learning which do not, however, need to be considered here. We have been investigating the proposition as to whether it was possible to carry over into the school life the method of education which is characteristic of whole-hearted purposeful activity outside of school. In the case of sewing we have a particularly good example of an activity with this possibility. After examining the psychology of the method in this particular case, we should certainly say that this method of education and method of teaching and method of learning, let us say Method with a capital M, is on a higher level. Now there are other things which the children learn in school besides sewing, things which society thinks it necesssary for children to know. Sewing happens to be not only a skill, but an activity in which purposes are, or should be, easily found. Can we get whole-hearted purposeful activities going in reading, writing, and arithmetic ? The answer will be found by an examination of how near to real life these things stand and whether they really represent activities themselves or are to be considered more as tools and aids to other activities whose " consummatory reactions " have primary meaning to the children.

In our description of the sewing activity, you noticed that something of measuring was called for in the estimation of the amount of cloth needed for the garments made. Also, arithmetic was found necessary in the purchasing of the cloth. In life we usually find arithmetic in such concrete situations as a part of other complete acts which we would describe not chiefly in terms of the arithmetic involved. Yet we recognise that the boys and girls need arithmetic and plenty of practice in it so that on those occasions the activity may not be blocked. Can we teach arithmetic on the higher level connected with the

children's own purposeful activities? There are many who say that we can and that the way to do it is to have the school situation so arranged that plenty of purposeful activities are going on, reflecting the busy-ness of the out-of-school life where arithmetic is constantly coming in for practical use. There would be the advantage in such an arrangement of making use in the school of the psychology of purposeful activity in connection with the arithmetic learnings involved and there would be the added advantage of securing a much broader and richer curriculum without the over-crowding which is apparent in the attempt to put in additional subjects which must be taught and learned as subjects. Similarly, writing surely ought to find a place in learning and practice in connection with activities which call for writing : dates letters, addresses, notices, journals reports, etc. Reading on one side is in a similar position : we have to read to learn about how to do things, how things are made, what we want to know about this thing we are interested in. On another side, of course, reading is an activity engaged in for its own sake : reading for enjoyment and appreciation of which we find so little in our schools at present. We might mention geography and hygiene, matters which we commonly designate as subjects to be learned by children in school, but which, so far as children are concerned, might be aspects of the experiences of the children in connection with purposeful activities undertaken by them. Certainly they do not meet hygiene and geography on the street and in the bazaar ; but they do have experiences here and elsewhere in which the subject-matter of geography and hygiene may be connected in a vital way.

If we should propose, then, to reorganize our school so that education might proceed on the higher level of whole-hearted purposeful activity, we should have to see that opportunities were ready for the pursuit of a goodly number of activities. It is conceivable that these might be of two kinds : individual activities in which individual children purpose and carry out some project ; and group activities in which the class members co-operate in planning and carrying out a project. While the first type is valuable and can be used a great deal, if sufficient plans and supervision are available, as for example in the sewing work described above, the class projects offer the most fruitful possibilities in organization. Herein the individual pupil would learn co operation, social functioning, very useful in developing character and good citizenship. Can we get enough group projects going which will take in a sufficiently wide area of children's present and potential experience so that the learning which takes place is ever valuable to the child and those with whom he is living and is further expansive, leading on to richer and more varied experiences and learning? That is the problem which educationists have set out to answer. They have answered it successfully in many schools in America and elsewhere. We are now trying to answer it in Ceylon. In closing I mean to give you a brief account of how the experiment is being tried in one school. The results of one year's work have been suggestive, as I have indicated in the decription of the sewing work, but the full application of the principle involves new teaching technique and new forms of organisation and administration which must be gradually worked out as the method is developed.

The first thing to be considered was some of the large movements, needs, and interests of the home and community life in which purposeful activities could be expected to arise if somehow brought into the school. Gradation would also have to be considered in the selection because some interests are more suitable to younger children and some to older. After much consideration, we decided that the following large interests could be placed before the children of the various standards with reasonable expectation that fruitful projects could be developed within them and that these would also represent sufficiently for each group the current and possible uses of the information and tools in the regular subjects included in the ordinary curriculum. We did not expect to do more the first year than to introduce some other activities into the school besides sewing in which the children could carry out their own or class projects and to make it possible for the other subjects to be brought into these activities where needed and on the other hand, these projects themselves to suggest fruitful correlations, studies, and if possible other projects in those special subjects. We called these large interests the Home Life Studies to show that we were interested in relating the children's school life to their present and future lives in the home and through the home in the community.

IV Standard. The home structure ; planning and building a house.

The projects which were worked out in this connection were in connection with the actual planning, preparing materials, and building the house by the children.

This was essentially a group project, the children coming to their own decisions with the guidance of the teacher and working together in all the work. After some time had been spent in looking over plans of houses and drawing their own plans, the children discussed the question of materials. They made their own forms to make mud bricks and investigated the kinds of clay most suitable for making them. The building of the house involved co-operative endeavour of another kind. The house is now nearly finished and throughout the whole progress of this activity, it has been evident that whole-hearted purpose has been the dominaat note. The class will use this house in connection with some of their activities next year.

Occasions for using arithmetic in measuring and computing are numerous in such a project and these occasions are full of meaning for the children. Hygiene and geography have also important connections in the building of a house, and we have tried to utilise these. The position of the house in the compound, the relation to the well, position with reference to sun and wind came in fruitful discussions.

V Standard. Furnishing the home.

The kitchen utensils for use in the seventh standard projects were planned and made under the direction of this standard. They have for some time been engaged in making baskets, mats, etc., so largely used in the equipment of homes in this country. They have more recently proposed to make some pots and pans out of clay and made an excursion to a neighbouring potter's village to investigate the question. In this standard there has been much of individual projects, but the group has worked in co-operation in many ways and the group has discussed the work and plans of work of the individual pupils. Here also we have had every evidence of whole-hearted purposes.

VI Standard. The cloth in the home.

The pupils have been engaged in the study of the weaving process and have constructed their own simple looms for weaving some simple mats and table pieces, the latter with simple designs worked out from their own plans. Here too have had both individual and class and group projects. In the making of the more elaborate looms several girls cooperated. Here the process is somewhat further away from the actual experiences of the home, although the activities connected therewith have significance. Some of the smaller girls of this standard have found the studying out of the process too exacting and probably these should always be encouraged to go on with simple and coarser work. Some of the girls have been quite successful, however, and the interest and skill which they have developed is promise of excellent craftsman's work on a real loom which they will be ready to use next term. The guidance needed in the development of these projects in weaving, was of course in all the other projects and could be gained only through experience with working the process out with the girls themselves. The interest has been keen on the whole, but there have been unnecessary discouragements owing to deficiencies in our organisation and guidance.

VII Standard. The food of the home.

The projects in this standard were related to the actual buying and preparation of the food needed in the home. The girls have had their own kitchen and made their own articles of food in connection with their studies of the general problems of marketing, preparing, and cooking. A more recent project was the improvement of the morning meal of the girls. They went into comparative costs and found that with some easily distributed additional labour

among the girls, they could much improve the character of the first meal of the day. This they have demonstrated to the joy of the whole school and the satisfaction of those who had to meet the accounts.

VIII Standard. Child care and training.

The care of babies and young children has been studied in as concrete situations as possible. The bathing of babies was demonstrated with actual infants by a nurse from the Inuvil Hospital. The girls of the class with the guidance of an experienced person have had the supervision of the health of the young children of the neighbouring vernacular school. They have learned how to treat simple ailments which mothers ought to know how to treat in the home. In sewing, the girls have made babies' garments and children's clothing. There has been evident in this class also much interest and enthusiasm for these types of projects. With our experience of this year, we shall probably be able to secure other vital projects especially connected with civics and history. From the standpoint of the growth of the children in the home and community and the education of children, an interest of large significance could be found in studies of present social and government institutions and their development.

I have endeavored to show how a beginning might be made in the conduct of education on this higher level of the utilisation of the children's own purposes. So far as we have gone, and it is but a step, we find abundant justification of our psychological analysis. We are still in the process of verifying our hypotheses as every educator must be if he wishes to proceed scientifically. I could bring from another point of view, that of sociology, several other principles which would confirm us in our philosophical decision to use this method. There are difficulties and plenty of them; but these seem to lie more in technique, organisation and administration than in the genuine adaptability of the theory. I propose to mention a few of these.

(1) The teachers' training: This needs to be of a much higher type than ordinary. The teacher must be willing and able to take the experimental attitude towards the work. He must be able to see the relation of the pupils' experiences in other terms than merely the formal subjects and to go with them on their excursions of investigation for material and guide them on the way. He must be quick to see leadings in other directions fruitful for the children, and to call attention to elements in the problems or investigation which might pass unnoticed. He must have that sympathy with and understanding of childhood that will enable him to become of the group itself, an acknowledged guide and leader, yet undergoing the experiences and going step by step forward in investigation with the children. Above all he must be a person of lovable, social character. It may seem that

I have described an unusual teacher; I am convinced that we have a large number available who can be developed if attitudes can be changed.

(2) The technique of the discussion group: It is important that the children form their own purposes. The suggestions, the interests, the motives will not grow spontaneously; they will grow out of the richness of the soil about them, the possibilities which they see suggested by the environment and activities going on about them. These must be focussed and developed into projects (especially in the case of class projects) in a class discussion. This must be skilfully led so that the children have a variety of alternatives before them from which choice can be made. The children now in school are not accustomed to freedom of expression in such discussion. Freedom must be developed and right ways of using that freedom, namely in true bringing out of the real opinions of the members of the class. Something in the nature of parliamentary procedure must be recognised by the children as useful to the activities of the class.

(3) The problem of the standard: Shall we aim at perfection in any activity undertaken by individuals or the group and how shall we progress towards a higher standard? This requires a separate article for its proper treatment. The results of activities in the school group will probably have sufficient variation to show the need of a standard and to provide a social incentive to reach a better standard. Of course we have standards in the activities going on all about us and children will not be slow to relate their work to those standards which they know, if it is their own standards which are at stake and not somebody else's requirements.

(4) Equipment: This needs to he more varied than ordinary, comprising all the simple useful tools and materials which are likely to be needed in the preparation of things in use in common life. A good library is especially necessary, and is one of our weakest points in the vernacular school. Information must be available for children to find out things for themselves.

(5) Time-table: This should be elastic so as to allow ample time to be given to the projects under way. It should provide also for a drill period in which the children may have a chance to perfect themselves in processes in which they find themselves deficient. A recreation project period for the appreciation of literature, music, and art should also he arranged.

Reorganization of the present school on the above basis may seem an almost impossible task. But by taking pains it can be done. Moreover, the taking of pains in this way, we have found from experience to bring an interest and joy in the teaching process which more than compensates. Indeed, life seems, new and rich in unthought of possibilities. And the reason is, of course, that the teachers themselves have entered into the creative life.

Editorial Notes.

THE YEAR NINETEEN HUNDRED AND TWENTY-FIVE marks the four hundredth anniversary ot the publication of the first English version of the New Testament. The name that is inseparabiy associated with that great event is William Tyndale. Tyndale was a Welshman, born in the year that Columbus discovered the New World, and educated at Oxford and Cambridge. He was early imbued with the idea that the Bible ought to be the property of the common people as well as of the priesthood who knew the classics. He is credited with the remark to an opponent. "If God spare my life, ere many years I will cause a boy that driveth the plough shall know more of the scripture than thou dost." This splendid ambition was fulfilled in 1525 when his translation of the New Testament appeared, just three years after Martin Luther's German translation had appeared. The event was memorable not alone for the religious life of the English-speaking world, but also for English literature. There has been no work, not even Shakespeare, which has done so much to influence English thought and literature and to maintain an exalted standard. The present English authorised version of the New Testament, while it is an improvement on Tyndale's version, is substantially the same, and remains a great monument to the work of a single scholar. It was Tyndale's ambition to be able to give the lay people an English version of the Old Testament also. He achieved a translation of about one half of the Old Testament, but was betrayed by a supposed friend to Emperor Charles V, being at the time a fugitive in Belgium. After a prolonged imprisonment he was tried and condemned for heresy, strangled and burned in 1536. It is recorded that his last words were, "Lord, open the king of England's eyes."

PRESIDENT ERNEST DEWITT BURTON of the University of Chicago died on May the twenty-sixth. Dr. Burton has been long known as one of the foremost living New Testament scholars. His "Harmony of the Four Gospels," published in collaboration with Professor W. A. Stevens is well known in this country, having been translated into some of the vernaculars. His "Harmony of the Synoptic Gospels in Greek" published in collaboration with Professor Edgar Goodspeed has been received as a great achievement. His "Commentary on Paul's Epistle to the Galatians" in the International series was the work of twenty years, and is everywhere recognised as the greatest work on that subject in the English language. Three years ago at the time when he had already reached tbe age for retirement the Trustees of the Untversity invited him to succeed President Judson to the Presidency of the University. The manner in which he took hold of the reins and energetically undertook a great forward movement for the University has been the wonder and admiration of the whole educational world. He has made the office much more difficut to fill than it was when he took charge, and yet in many respects much more attractive. For a number of years Dr. Burton was the

representative of the Ameriean Baptist Foreign Mission Society on the Governing Board of the Madras Christian College, and has had a profound interest in the welfare of this College. On more than one occasion he visited the Orient so that his knowledge of affairs in the throbbing East was first hand. We share in the experience of sorrow which is felt by so many friends all over the world, for in his passing this College has lost a staunch friend.

THE WORLD OF BRITISH PHILOSOPHY has suffered irreparable losses during the past year. Four of the foremost thinkers of the day have died within a few months of one another—Bosanquet, Bradley, McTaggart and Ward. It would be difficult to think of four greater philosophical minds in Britain, or for the matter of that in the world of the present. Professor James Ward died in April at the age of eighty-two. In his early days he entered the ministry in the Congregational church, but in 1875 he was elected a Fellow of Trinity College, Cambridge in, 1879 becoming Professor of Mental Philosophy in the University. Ward's contributions to philosophical literature were of the first rank. His critique of *Naturalism and Agnosticism* published first in 1892 and reaching a fourth edition in 1915 is still an unanswered criticism of the mechanistic view of life. His *Realm of Ends* is also a great work. One of the things for which he achieved a deservedly great reputation was his well-known article on *Psychology* which appeared in the ninth edition of the *Encyclopaedia Brittanica*, unaltered in the eleventh edition, and which subsequently appeared with some additious in book form under the caption, *Psychological Principles*. His last great work was *A Study of Kant* which appeared only a little over a year ago. The fact that he was able to publish such an important work after the age of eighty is a testimony to the virility of his thinking even in advanced age. He has left a gap in present day philosophical ranks which will be difficult to fill.

What Men Think

An Analysis of Faith.

In the January number of *The Hibbert Journal* Professor James Ward, who has since died, writes on 'The Christian Ideas of Faith and Eternal Life.' In the course of the article he has made a criticism of contemporary philosophy of religion which is worthy of careful thought. It is his conviction that there is a tendency to do scant justice to the distinction between the psychological characteristics of religious experience and the characters of its object. It is fundamental, according to Ward, that we recognize the duality of subject and object. Ward's position is quite the reverse of the Upanishadic doctrine that the religious experience is complete when it realises that there is no distinction between subject and object. '*Tat tvam asi.*' To be sure the Upanishads recognise this only as an ideal, and make their own provision for an object of worship in distinction from the subject in Isvara or the personal Brahman. There is much to be said for Ward's contention. Notwithstanding the fact that philosophy has tried so persistently to find a monistic basis for explaining the world and religious experience, it has not been found by the majority of people to be religiously satisfying. The kind of God for whom most men long is one that is more than human, one that transcends even our best thoughts of Him. Dr. Ward goes further and shows that such a duality is true to the psychological facts of religious experience. He reminds us of his keen analysis of consciousness in his article in the *Encyclopaedia Brittanica* when he writes: "Whenever we talk of experience we imply (1) a subject aware of an object then and there present and confronting it, whereby (2) it is affected, and to which (3) it actively responds." In any experience, whether religious or otherwise, although there is a relationship between subject and object, the two are always distinct. Again to use Ward's own words, "As to the experient himself, all he can say is that the object is 'given' to him, and does not emanate from him." This takes faith out of the realm of the merely cognitive, and gives it an activistic emphasis which is very welcome. Instead of being simply an acceptance of other peoples' formulas, it becomes an active and personal participation in definite and commanding ideals.

Huxley's Centenary.

Thomas Henry Huxley was born on May 4th 1825. The centenary of his birth has been marked by *Nature* by the publication of a supplement of more than 50 pages, containing articles by one of his sons, a grandson and many other scientific men who either knew him personally or are authorities on subjects with which his name is associated. Besides a hundred or so technical papers, he wrote numerous books and literary articles on anthropological, geological, biological, educational, philosophical, ethical and religious subjects. He was the author of a great deal of modern biological classification and terminology, and was a pioneer in the teaching

of practical natural science and in adult education. It is, however, for his championship of Darwin's theory of evolution and the part he took in the resulting public controversies, that he is best known. At the time, his views met with bitter opposition from the religious world, but it is now recognised that his fearless and passionate advocacy of what he considered to be absolute truth has rendered great service to true religion by demolishing several ancient misconceptions. Few men have acquired so wide and deep a knowledge or combined to such a degree an intense love for humanity with an intense love for scientific truth. The motive that dominated his strenuous life is well summarised in the following quotation from his autobiography :—

"To promote the increase of natural knowledge and to forward the application of scientific methods of investigation to all the problems of life to the best of my ability, is the conviction which has grown with my growth and strengthened with my strength, that there is no alleviation for the sufferings of mankind except veracity of thought and of action, and the resolute facing of the world as it is . . ."

Biological Effects of Sunlight.

At the Royal Institution, Prof. L. Hill recently gave a summary of the results obtained in investigations on the biological action of light at the National Institute for Medical Research, Some of these results are of particular interest to those living in the Tropics. It is well known that besides the radiations that affect the eye, sunlight contains radiations of longer and shorter wave-lengths. The former is called infra-red light, or radiant heat, and the latter ultra-violet light. From the medical point of view, the ultra-violet radiation is the most important constituent of sunlight. By using a quartz lens and keeping the surface acted upon under a layer of water, the heating effect is prevented but the ultra-violet light remains unabsorbed. When light under such conditions is focussed on the white skin of the arm, it produces no sensation but after five minutes exposure erythema (reddening of the skin) develops in the course of a few hours and a lasting brown pigmentation results. By passing the light through a 3% solution of quinine, the ultra-violet but not the visible light is absorbed and after exposure of an hour no erythema or pigmentation occurs. It has been claimed that sun-baths have a specific action in preventing infection by diphtheria. Experiment showed that light-baths strong enough to produce erythema had the effect of increasing the general resistance of the body to infection but produced no diphtheria antitoxin. After an exposure of two hours, the haemobactericidal power of the blood towards staphylococci had increased by 20%. Melanin, the black pigment in the skin of the dark races, has the effect of absorbing the light in the superficial layer and thereby stimulating perspiration, which by evaporation has a cooling effect. It has been believed for some time that rickets is due to the absence of vitamin A from the diet. Cod-liver oil and other substances rich in vitamin A have been proved to have a curative action. For some time, it has alson been known that exposure to light has a curative effect. It is now found that vitamin A is not the active agent in curing rickets, for inactive substances such as linseed oil, casein and flour after exposure to ultra-violet light acquire curative properties equal to that of cod-liver oil although their vitamin A content is not increased. Water,

starch, sugar and many other substances cannot be thus activated. Certain dyes such as eosin and especially haematoporphyrin, a derivative of the haemoglobin of the blood, have the property of making the substances treated with them react towards ordinary light as they would towards ultra-violet radiation. Minute amounts of the pigment injected into albino animals causes them to become so sensitive to light that a short exposure may cause death. In ordinary animals their natural pigments absorb the light and they are not affected. A European into whom haematoporphyrin has heen injected becomes liable to oedema on exposure to light and remains in this condition for some weeks. Methods of measuring the intensity of ultra-violet light were devised and it was found that on a clear day when the sun is at its zenith, less than half the ultra-violet light came from the sun directly, the greater part coming from the blue sky. The writer advocates exercising in scanty clothing near powerful arc lights and the use of Vitaglass windows which allow the passage of ultra-violet rays, as measures for improving the health of school children in large cities during winter.

Book Reviews

Dravidian Gods in Modern Hinduism, By W. T. Elmore, Ph. D. Madras : Christian Literature Society, 1925. Pp. xiv and 1€3. Rs. 2-8.

This volume is a very welcome reprint of a volume published in 1915 by the University of Nebraska, being the author's thesis for the doctorate at that University. The demand for the book in India has been far greater than the supply, and the Christian Literature Society deserves our thanks for publishing this edition at so reasonable a price. The original edition sold at double the price and was well worth it.

There are only two volumes which make any serious attempt to deal with the Grama Devatas of South India, that of Dr. Henry Whitehead, former Bishop of Madras, and the present volume. It is of interest that each has reached a second edition. Naturally one can scarcely avoid making comparisons between two books that cover somewhat the same field. To be sure, there is abundance of material, and the reader will find variety enough to make it well worth his while to study both of these works. But, if one has to pronounce judgement, it must be in favour of the present volume. It bears the marks of more first hand research, and deals with problems more practically. Dr. Elmore was for many years a missionary of the Telugu country, and gathered a good deal of his material through his ability to use that medium. He recognises, however, that conditions differ from district to district and sometimes from village to village, so that hasty generalisation is impossible. So that he wisely gives the names of villages, districts and castes in his descriptions.

The two chief classes of Dravidian deities are the Seven Sisters and the Saktis. The names of the Seven Sisters differ slightly in different localities, but everywhere there is acknowledgement of their one brother, Potu Razu. The functions of these goddesses are delineated wherever it is possible to do so definitely, and the manner of their worship is described. The Saktis have arisen from tantric Hinduism but have taken on many Dravidian elements and are worshipped much like the Seven Sisters in general. One of the distinguishing characteristics of the Dravidian cult is the prevalence of the bloody sacrifice, in many cases conducted in very revolting ways. The Hindu votive offerings, on the other hand, are rather offerings of fruit and grain and do not include animal sacrifice. Nevertheless the two elements have become hopelessly mixed up, so that it is difficult to differentiate between them. So far as Dravidian worship is considered, there is no evidence of being motivated by gratitude or reverence. The evidence from this source would substantiate the oft-quoted statement of Petronius that fear made the gods. Propitiation and conciliation of powers that are to be dreaded for fear of the harm which they will do is the one dominating motive of the cult. In this respect Dravidian religion has greatly influenced Aryan religion also.

One of the most interesting problems which is discussed in Bishop Whitehead's book is the origin of the buffalo sacrifice. The Bishop puts forward the thesis of a

totemistic origin, and offers certain facts which have suggested the hypothesis to him. Dr. Elmore criticises this hypothesis and thinks that Dr. Whitehead's conclusions are unwarranted. He puts forward the counter suggestion that the buffalo sacrifice can be explained on the basis of celebrating the conquest of an enemy. Some of Dr. Elmore's arguments in criticism of Dr. Whitehead are more convincing than others, but he goes too far in trying to urge the total unlikelihood of the buffalo being a totem animal, for we know that in the case of the Todas it is so regarded. Nevertheless of the two hypotheses, Elmore's is the more convincing. The last word on this subject has not been said. As Elmore admits, it is exceedingly difficult to reach any final conclusion on account of the meagreness of the data available.

There is much scope for further investigation in regard to the Grama Devatas. We welcome the article by Mr. Paul Lawrence in this issue for its suggestiveness. If it moves others to investigate and offer constructive criticisms, the Magazine will welcome tham, and Mr. Lawrence, Dr. Elmore and Dr. Whitehead will, we are sure, also welcome them.

A. S. W.

Agricultural Co-operation in India By John Mathai, B. Litt., D.SC., Professor of Indian Economics, University of Madras. Madras: Christian Literature Society for India, 1925. Pp. xlix + 175. Price Rs. 1-8-0 (paper), Rs. 2 (cloth).

Economists and statesmen are agreed that in this era of complete disorganisation in her economic life India can find her level only through the "co-operative" efforts of her small agriculturists, artisans and traders. The co-operative credit movement was inaugurated in this country in 1904 at the instance of the State and the phenomenal progress that it has made is sufficient evidence that it is quite suited to conditions in India. The poverty of the poor worker whether in agriculture or manufactures is so great that he has no means of carrying on his industry with his own capital, while the rates of interest on loans in rural India are necessarily high owing to the preponderance of needy borrowing, the risk of lending to the poor, and to the want of bargaining capacity of the poor borrower. The co-operative credit movement tries to mobilise the personal credit of the small producer, to reduce the risks of lending, to check unproductive expenditure, and to bring the village money market into close touch with the wider market for loans.

This small volume of 175 pages gives a description of the bare structure of the co-operative credit movement in India based on the information formed in official publications, The introductory section is devoted to making a brief survey of the principal types of co-operation in other lands, such as "the Rochdale" system in Great Britain, the Self-Governing workshop, the Raiffeisen and Schulze-Delitzsche types in Germany, the Luzzathi banks of Italy, and the characteristic types of agricultural co-operation in Ireland and Denmark. A summary of legislation in India—giving the general scope of the Acts of 1904 and 1912—the indigenous attempts at co-operation in India, a statistical survey of the growth of co-operation since 1904, the methods of raising capital and lending money as well as manangement which obtain in Co-operative Credit Societies and the nature of state assistance are the main topics dealt with in this book. An elaborate index is also given at the end.

The account is quite clear and the author's desire to be strictly scientific and impartial is everywhere visible. On problems of controversy our author is seldom dogmatic in his assertions or expression of opinion, but is merely content to state the pros and cons in a dispassionate way making the reader think for himself and arrive at proper conclusions. There is no attempt in this book to sermonise or insist on ideals for propaganda purposes, so characteristic of the greatest English writer on co-operation, Mr. Henry Wolff.

Whether by oversight or intention—most probably the latter—our author omits to describe the future possibilities of the co-operative movement in India. Mention is no doubt made of the few types of non-agricultural credit societies existing at present in India, but he does not give, in our opinion, a sufficiently elaborate account of their present position or future possibilities. The writer, for instance, mentions in one connection the formation of Land Mortgage Banks, but does not develop the scheme. We know that Dr. Mathai is one of those who keenly advocate the formation of such banks as well as of other types of agricultural co-operation; a forecast into the future on these lines would prove of inestimable value to the workers in the field.

The Christian Literature Society is to be congragulated on its attempt to plan the *Books for the Times Series* and its selection of Dr. Mathai as the author of the first volume on "Co-operation." The other volumes in preparation are "India and the League of Nations," "Legal Aspects of Social Reform" and "Rural Education." The purpose of the series, we are told in the preface, is to place before readers in India careful and scholarly studies of the important questions of the day—political, social, economic and religious—and aim at giving their readers reliable information as well as suggesting new lines of inquiry and thought. The volume before us fulfils this purpose.

S. S. A.

The History and Institutions of the Pallavas By C. S. Srininivasachari, M.A. Pachaiyappa's College, Madras. Wesleyan Mission Press, Mysore 1924.

This paper is an attempt at a brief description of the history of the Pallavas and the culture of their age. As to their origin the author says: "The question of who the Pallavas were, has not, even after years of controversy, been finally settled. Their origin constitutes, in the words of an eminent historian, one of the standing riddles of Indian history". It would seem however "that the Pallavas were a body of foreigners who entered India by way of the north-west gradually became Hinduised and forgot all about their origin.' They set up a new and independent dynasty in the Andhra country, and entered into marriage alliances with the rulers of the Dekkan. As Dr. S. K. Aiyangar says: "as far as the available evidence goes, they were a dynasty of the Andhras, probably related to or even springing out of the clan of the Satavahanas." Dr. S. K. Aiyangar also thinks that there is sufficient evidence to show "the distinct Asokan character of the organisation of government, and its affiliation even to the Arthasastra." What is even more important, these details show that the Pallava administration was northern in character, perhaps quite distinct from that of the Tamils further south.

The extent of the Pallava dynasty in its heyday of power comprised probably all the territory from Kanchi to Vengi, and the Districts of Kurnool, and perhaps also Anantapur, Cuddappah and Bellary. As to the social and political institutions Mr. Srinivasachari says : "The Pallavas brought to Kanchi the culture of the north, as distinguished from what may be called Dravidian or southern culture . . . Kanchi rose to be a great literary centre, and a gathering place of religious disputants of all creeds . . . It is, however, as a centre of Sanskrit culture that Kanchi was most famous in the period . . . With such a wealth of cultural heritage, it is no wonder that we find the Pallava age a glorious epoch of art and architecture . . . The architectural character of early Pallava monuments is simple and severe, but indicative of great strength and durability." The Pallava village administration, seems to have been an outgrowth of the earlier Chola village organisation for there are traces of a continuous evolution of village life. There were taxes on oil-mills, water tax for irrigation, duties on looms and toddy-drawers and shepherds, fees for bazaar stalls and so forth.

Religious toleration prevailed in the Pallava period, for the kings endowed concurrently Saiva and Vaishnava shrines. The temples had great iufluence in moulding the temper and culture of the people, for they often served as the meeting place of the village sabha, as the theatre, and the forum of the village. "Provision was made frequently for the feeding of Brahmins, ascetics, and the poor ; and in almost every temple a free school was maintained ; while in some temples were maintained colleges for Vedic and higher studies, supported by liberal royal grants". It is in this way that this little study opens up to us an account of a once strong and progressive people, now almost forgotten, and this effort to keep their memory green is a worthy one. We are grateful to the author for this excellent and informing little study.

A. J. S.

More Psychology and the Christian Life By T. W. Pym, D. S. O., M. A. London : Student Christian Movement, 1925. Pp. x and 178. 4s.

The person who reads the title of this volume, unaware that the author had written a previous volume, *Psychology and the Christian Life*, will be somewhat non-plussed by the caption. It could scarcely be more awkward. Why did the author not preserve the same title as the first, and call it 'Second Series' or something of the sort ? However the title is not the most important item about a book, though choosing a good one is by no means to be neglected.

The aim of both of these volumes, as the author indicates is practical. He is not seeking to write a Psychology of Religion, or even of the Christian religion. If he were, he would undoubtedly have given us "more psychology" and less of practical Christianity. From the psychological viewpoint, there is neither claim to nor evidence of profound scholarship. The books do not even assume that the reader knows anything much about psychological science. The object is to make use of some of the principles which psychology has disclosed for the practical enrichment of the religious life. In fact the principles which the author uses are rather psycho-analytic than psychological. The facts that the first volume within

three years has run into seven editions, and a second volume been forthcoming are evidence of the conspicuous success which has met Mr. Pym's work. There was, without doubt, an opportunity for work along these lines.

In the present volume the topics which are discussed gather about the psychological facts regarding imagination, suggestion, will and instinct. Obviously the author has selected wisely themes the practical bearing of which is large. Although the discussions suffer from rather too much of the old faculty point of view and too little of the functional approach, nevertheless there is much of suggestiveness which ought to commend itself to those who desire to make their science an aid to faith.

The Philosophy of Beauty By James H. Cousins, D. Lit. Adyar : Theosophical Publishing House, 1925. Pp. viii and 99. Re. 1-4.

Dr. Cousins calls this little book " a western survey and an eastern contribution " and that phrase aptly describes the way in which he has approached the aesthetic problem. The book is divided into two sections in the first of which he gives a very brief survey of aesthetic thought in the West. He gives relatively the greatest attention to Croce whose work is one of the most important of the more modern works on the subject. We have to admit to sharing with our author in the irritation which comes from reading Croce on this subject. There is a cock-sureness about his attitude which is not convincing, and the way in which he reduces so much of life, including religion, to the cognitive indicates a one-sided view of life. The criticism which Dr. Cousins levels at many western philosophers of beauty is true. They have given too scant reference to the feeling side of the attitude. On the other hand there are some exceedingly important writers in the West who have taken account of that element of whom the author makes no mention, and to make a wholesale criticism of western thinkers is not quite fair when those who have approached the problem psychologically are neglected. No reference is made to George Santayana, Henry Rutgers Marshall, E. F. Carritt or E. D. Puffer.

The second portion of the book deals with eastern ideals of beauty, in particular with those of India. The author interprets western art as more individualistic, and eastern as more synthetic. The Indian idea of an all pervading Cosmic Personality (Brahma) finds one manifestation in the beautiful. This, of course provides for an intimate relationship between religion and art. But Dr. Cousins is going pretty far when he speaks of " the impossibility of approach to realisation of the Divine Being without the aid of the images of art." Had he used the phrase " images of the mind " instead of " images of art " it would have expressed a psychological truth. Nevertheless the book is provocative of thought and contains much that is instructive.

A. S. W.

THE HON. KHAN BAHADUR MUHAMMAD USMAN SAHIB BAHADUR, B.A.
Member Executive Council, Madras.

RAO BAHADUR O. THANICKACHELLA CHETTY, B.A., B.L.,
President, Corporation of Madras.

College Notes.

NOT LONG AGO WE CONGRATULATED Khan Bhadur Mahomed Usman on his election as the President of the Madras Corporation and we have great pleasure now in congratulating him again on his appointment as a member of the Council of the Governor of Fort St. George in the vacancy caused by the elevation of Sir Mahomed Habibullah Sahib Bahadur as a member of the Imperial Executive Council. Time was when Indian publicists were content to be helpful critics of the British Government in India, when they believed that they could best serve their country by keeping themselves free from the shackles of office. But the new era of increasing association of Indians in the administration of this Empire has made it obligatory on them to shoulder responsibilities of office however irksome that may be to individuals habituated to a life different from relentless official routine and discipline. The appointment of Dr. Usman has been welcomed by all sections of the commnnity and we have no doubt that Dr. Usman will justify the confidence reposed in him by His Majesty the King. Dr. Usman is entrusted with the administration of the Home Department, a difficult portfolio at the best of times but a specially trying one during the present transitional period through which this country is passing. The enlarged councils have made the life of the members of the Cabinet very strenuous and situations will arise that will often be vexatious and exasperating. Magnanimous, patient and reticent, Dr. Usman knows where to consign unjust criticisms. Dr. Usman ought to have an easy and pleasant time in the Council where hecklers will be easily parried and we are convinced that the long period of training he had in this College will go to his rescue to relieve difficult situations. With two of our old boys already in the transferred half and another now in the reserved half of the Government the dyarchical machinery which seemed to creak at times ought to work now in greater harmony. Our congratulations to the Hon'ble Khan Bahadur Mahomed Usman Sahib Bahadur.

THE POSITION VACATED BY KHAN BAHADUR MAHOMED USMAN has been filled by another old boy of the College Rao Bahadur O. Thanickachella Chettiar who was elected as the President of the Corporation on April 7th by a majority of votes. After graduating from the College. in 1890 he joined the office of Messrs. Short Bewes and Co., and by sheer hard work he gradually rose to the position of partner of that well known legal firm of Madras. Recently he retired from partnership and enrolled himself as an Advocate of the Madras High Court. Mr. Chettiar for a time successfully resisted the lime light and excitement of Indian political agitation and was content to be a successful solicitor in his offices at Esplanade. With the organisation of the non-Brahman movement Mr. Chettiar made his appearance as a public man and he was one of the men who then abandoned their seclusion to work for the uplift of the vast masses of his backward and lethargic countrymen. We are not now concerned with the ethics of that social and political upheaval but the fact remains that Mr. Chettiar threw himself into that movement with characteristic

energy and he has since remained a vigorous exponent of its creed. His name is intimately associated with that movement and now he holds an honoured place as a front rank politician of that party. He made his public debut as a councillor of the Madras Corporation and he spent the first few years of his councillorship in courageously exposing and mending the several irregularities of the affairs of that body. The reputation he gained in the Corporation made his way easy to win a seat in the Madras Legislative Council as one of the representatives of the City on the inauguration of the Reforms of 1919. In the Legislative Council Mr. Chettiar found himself at a period when the non-co-operation movement was at its height and he played a conspicuous part as the champion of law and order. His speeches in the Council prepared with the skill, care and thoroughness of a great solicitor are characterised by frankness, practical wisdom and breadth of sympathy. He is one of the few public men who insists on getting to the bottom of things to discover for himself the facts of a given situation. A stout clean fighter, he has struck several shrewd blows in the interests of his countrymen who have been looking up to him as the fearless advocate of their case. Mr. Chettiar has a lively political sense and he has on several occasions largely contributed to the coherence of the non-Brahman party. He scorned the professional agitator and never lent his support to their political projects to win vulgar applause. A great believer in Anglo-Indian co-operation and a staunch loyalist he organised at some personal risk from the militant section of the non-co-operators a corps of volunteers to help the police maintain order when the Prince of Wales visited this City in the winter of 1922. Happily free from the responsibilities of office Mr. Chettiar has been inclined on occasions to speak strongly on certain public questions but it is obvious that this hard headed solicitor must have been feeling strongly on those subjects. In appreciation of his public services the Government conferred on him a Rao Bahadurship in 1923. The future is in the lap of the gods but if we may venture a forecast of coming events Mr. Chettiar is destined to lead the great constitutional party of this Presidency. Mr. Chettiar's personality inspires confidence and he has just those qualities that will make him a great leader of men. The prevailing social and political conditions are not ripe enough and consequently are incapable of throwing up a leader but cry for a commander—a commander who will judiciously reveal and conceal himself to suit the shifting situations. And Mr. Chettiar may be trusted to be a skilful commander of his countrymen in years to come. Our hearty congratulations to Rao Bahadur Thanickchella Chettiar on his election as the President of the Madras Corporation.

WE ARE VERY GLAD TO LEARN that the University of Aberdeen conferred at its convocation held in April the Doctorate of Divinity on its distinguished alumnus and the head of this institution—Mr. Meston. Our congratulations to Dr. Meston.

THE COMMENCEMENT OF THE SUMMER VACATION saw a few changes in the staff of the College. Mr. Corley, Mr. MacKenzie and Mr. Campbell went home on furlough, and Dr. Moffat went to Europe on short leave. Mr. Barnes returned from furlough in June after a tour round the world. We have great pleasure in

welcoming the new Indian professor of Philosophy—Mr. S. J. Theodore who joined duty in June. Mr. Theodore is a distinguished graduate of Cornell University and was the recepient of the Day Travelling Fellowship of the Yale University from which he has taken the M.A. and B.D. degrees. He then proceeded to Oxford and worked for a few years under Dr. Schiller. At Oxford he took the B. Litt. degree and the Diploma in Education.

THE NEWS OF THE APPOINTMENT OF MR. J. P. MANIKKAM, Senior Lecturer in Physics as a member of the Professoriate of the College will be received with very great pleasure by his many students and friends throughout the Presidency. Mr. Manikkam graduated from the College in 1903 and joined the staff as a lecturer in the Physics Department and he has risen to the present position by his long record of patient and loyal work given ungrudgingly in the service of the College. It is hardly necessary to add what a valued and respected member of the staff Mr. Manikkam has been, and his presence in the Senatus will doubtless be a source of strength to the College. Alone of all the members the Indian staff Mr. Manikkam enjoys in a special measure the singular distinction of being the idol of many generations of students whom he has been influencing in a remarkable way by his equanimous and genial personality, Mr. Manikkam is not relinquishing the management of the Fenn Hostel but will be its Warden.

WITH THE RETIREMENT IN JUNE OF DR. MACPHAIL from the Vice-Chancellorship of the Madras University there has passed from the active work of the University a great authority on Indian educational problems and a vigorous personality who has been influencing, shaping and adjusting the educational policy of the Government to the needs of this land. And his mantle has now worthily fallen on the shoulders of Sir Venkataratnam Naidu the newly appointed Vice-Chancellor. The appointment of Sir Venkataratnam in a Presidency which has won some notoriety for the existence af acute communal proplems is a remarkable tribute to his eminence as an educationist and to his personal worth. The former Vice-Chancellor was entrusted with the difficult task of breathing on the dry bones of the University Act of 1923 and now that the several 'authorities' have been created the new Vice-Chancellor has the equally difficult task of nursing the re-created University to the best advantage of this Presidency. We need hardly remind our readers that Sir Venkataratnam is one of the most distinguished and respected of our old boys who has been associated with the Pithapur Rajah's College as its Principal for the greater part of his life. Sir Venkataratnam is justly revered throughout the Presidency for his culture and character and saintliness of disposition, and his appointment as the Vice-Chancellor of the Madras University is the recognition of a life of service and sacrifice in the cause of education at the altar of his country.

WE DEEPLY REGRET TO RECORD THE DEATH from heart failure of Mr. J. V. A. Rajendram, Head Clerk of the Bursar's office, which took place at Madura on 17th April. Mr. Rajendram attended office on Tuesday 15th April and looked healthy and cheerful as usual and the news of his death on Thursday came

as a shock to his friends and colleagues in the College. Mr. Rajendram belonged to the Tinnevelly District and entered the service of the College in 1906. The position of Head Clerk in the College is an exacting one and Mr. Rajendram won the approbation of successive Bursars as a capable and hard working accountant. He had a good grasp of the finances of the College and in his deaty the College has lost a devoted servant who for 19 years gave of his best to the servich of this institution. Mr Rajendram has left a large family behind and his untimele and sudden end at the age of 52 is mourned by a large circle of friends and relations. We convey our sincere sympathy to the members of the bereaved family.

ONE OF THE CHIEF ATTRACTIONS OF THIS INSTITUTION to the people of South India has been the emphasis that is placed on the cultivation of friendly relationship between the members of the staff and the students since this reacts in a variety of ways to the mutual advantage of the teacher and the taught. The many social functions connected with the College are the instruments for promoting this happy intercourse and with the progress of years the social side of College life has suffered no diminution but on the other hand has enlarged taking a definite shape. The College session opens with the Brotherhood tea party at College Park and a strenuous year is brought to a close appropriately with the inter-hostel dinner at College House, many other social functions interspersing the middle. The inter-hostel dinner which promises to become an important annual event was held for the second time on Wednesday 11th March on the terrace of the College House which was very kindly placed at the disposal of the organisers by Mrs. Hogg. Nearly 250 students belonging to diverse creeds and castes sat down to dinner and the presence of Mrs. Hogg added greatly to the charm of the pleasant evening. The significance of this College event cannot be exaggerated in a country where the rigidity of social arrangements is not yet weak. The function is the natural off-shoot of the crumbling down of denominational hostels and it sets the seal of good followship that exists among students in the hostels and in the Colleges all the year round. After dinner complimentary speeches were delivered and the function came to a close a little after 8 p.m. Thanks are due to Mr. M. S. Sabhesan and his enthusiastic colleague Mr. L. N. Subramaniam, the organisers of the function for a very enjoyable and successful evening.

U. T. C. NOTES.

At the end of last Term a Rifle Meeting was held on the short range for recruits. Our team made a very good show after short training, and came out easily first. It was composed of the following :—M. P. Joseph ; P. R. Subramanian ; J. A. Thivy ; F. Kallat ; A. S. B. Philip ; M. A. Subhan.

Bangalore camp in May was a great success, largely owing to the cyclone which laid the original Camp flat on Agram Plain. The artillery very kindly gave us the use of many of their buildings and in the shelter of these we defied the storms, and escaped the hardships of the last two camps.

The first four days were spent under Company arrangements, and we had three delightful and strenuous tactical exercises on a small scale. On the first evening we

practised methods of reconnaissance, and advanced in open order towards a large trench. Next evening we occupied this trench with groups of sections under N.C.Os. while Pachayyappa's Company advanced to find us. Our men kept so well concealed and used their cover so well placing green branches on their conspicuous helmets that "D" company were in real doubt of our position until we stood up, and revealed ourselves. It was a valuable training in observation and in sending messages.

Next week we had two large scale Field Days, which were not enjoyed so much as last year's battle since most of the time was spent looking for the enemy, and very little in the driving of him from his position. The first scheme saw the staff instructors posted at various points on the ground which we had to search, and they had valuable information on their persons. Some very humourous incidents resulted. One Jock Instructor from the Highland Light Infantry posted himself up a tree, which the searchers considered out of bounds. A group of students came along, and he coughed, but they could not find him. They decided to post a sentry, who soon began to slumber or dose after his hard march, while the Jock slipped down, and made off. His own description of this in a broad Doric was delicious. Another Instructor was captured and searched so thoroughly that he wondered whether he was to be left with any clothes.

The chief events of the camp were the sports, and the Company Ceremonial Drill Competition. In the first we did very well, coming a good second to Presidency, for whom Veera Singh gathered many points. T. A. Narasimhulu won the half-mile and the mile and also the cross-country run in very good style. We came first in the relay race, but were defeated in the tug-of-war by Presidency's well-trained and much heavier team. However we pulled them over last year.

In the company competition we came third, the Medical being first and the Law second. So that we stood first among the non-professional Colleges. A pleasing feature of this year's competition was the fact that only thirty points separated the first from the last company, a proof of the general all-round improvement which was the most marked feature of the camp. Our turn-out was excellent and so was our march-past, and since we were only fourteen points behind the winners, we are confident of better success someday soon.

We had many enjoyable events in the evenings, including several good boxing tournaments, and some jolly concerts, especially a homely affair we had among ourselves in "C" Company Barracks, when many shy folk contributed. A great treat was the spectacle of the H. L. I. pipers and dancers, who showed the students the wonders of Highland music and of the Highland fling and sword dance. The result was a universal desire to be taught those dances!

Captain Maxwell Lawford, who has been the soul of the corps since it began to be, in a farewell speech recounted the history of the corps and told what its future should be. We cannot thank him sufficiently for his leadership and inspiration.

Our best thanks will be to so train and prepare ourselves each one that the U. T. C. shall ever flourish and go forward.

THE REPORT OF THE COLLEGE COUNCIL FOR 1924 opens with as ymp athetic reference to the retirement of Dr. Devanesen, Professor of Biology, who

had with such startling suddenness been bereaved of a helpmeet respected and warmly appreciated by all who knew her. This shattering blow had such serious effects on Dr. Devanesen's health that the Council gave him leave of absence till the end of 1924, in the hope that by that time he would be sufficiently restored to be able to resume his duties as professor of Biology. To their great regret, however, this hope has been disappointed. They have been medically advised that not only is it out of the question for Dr. Devanesen to return to his post at present but that it is not yet possible to say when he will be fit for regular duty. With the utmost reluctance, therfore, the Council have had to bow to the necessity of parting with a professor from whose distinguished ability and devotion to scientific research much had been expected. Although Dr. Devanesen's tenure of office as a professor has been so short, he had a long earlier connexion with the College as student, demonstrator and lecturer; and in taking leave of one who has served them so faithfully the Council desire to express their sympathy with him in his protracted illhealth and their hope for his complete recovery.

It was mentioned in last year's Report that Mr. Macartney had gone to England on six months' furlough in order to obtain treatment by specialists for his eyes which had been seriously affected by his severe illness of the previous year. On their advice he found it necessary to relinquish the idea of returning to a tropical country, and the Council received his resignation in May with keen regret. By those students who have enjoyed the privilege of studying English literature under Mr. Macartney, particularly in the Honours classes, the severance of his connexion with the College will be recognised as a loss the magnitude of which it would be difficult to exaggerate. Mr. Macartney had an exceptionally intimate knowledge of English literature, and both his skill as a teacher and his whole-hearted sympathy with the work of the College were universally appreciated. His genial presence will be long missed, for in parting with him his students have bidden farewell to a warm and eager friend, and his colleagues to a loyal and gracious comrade. All who have listened to the impressive sermons he preached in College Church will cherish the hope that ere long Mr. Macartney may occupy in the Church at home the position of influence for which his singular gifts mark him out. The Council would express to him their appreciation of his service rendered with such ability and unfailing courage, and they would assure him of their best wishes for the future.

Mr. Haworth resigned in March and Mr. Kandaswamy Chetty in December Mr. Ananaratavinayagam Pillai resigned his position as Superintendent of Vernaculars and Lecturer in Tamil from 1st January. Mr. J. R. Macphail was appointed as Professor of English for two years and Mr. W. F. Kibble as Professor of Mathematics.

After making reference to a few other changes in the Staff the report mentions the

important step taken by the Council when they decided to secure a Medical Officer for the School and College. Dr. V. J. R. Asirvatham, a graduate of the College before he graduated in medicine, was appointed to the post, and entered on his duties at the beginning of the academic year. The medical examination of every student of the College and every pupil of the School is now regularly carried out, the health of the hostels is carefully attended to, and much benefit has been experienced from the daily work and advice of Dr. Asirvatham.

In the University examinations the students of the College maintained its reputation. For the Intermediate Examinations held in March and September the College sent up 152 students, including 9 for one Part only. Of these 60 passed completely, namely, 15 in Group I, 17 in Group II, and 30 in Group III, while 30 passed in Part I and 8 in Part II only. Twelve passed the examination in the first class. At the B. A. Degree Examination 153 appeared from the College in English, of whom 103 passed; while 152 appeared for the various optional Groups and 101 passed, namely, 5 in Group I, 16 in Group II 13 in Group III, 30 in Group IV, and 37 in Group V. Four passed in their optional subject in the first class. For the preliminary examination prescribed for candidates for the B A. (Honours) Examination 43 were presented and 35 passed; for the final examination 44 appeared and of these 30 obtained the Honours degree and one the ordinary degree. Three University distinctions were gained by students of the College. The Lord Pentland Prize was awarded to T. H. M. Sadasivayya, the Miller Gold Medal to P. Mohana Rau, and the Caithness Prize to P. Abraham. Dr. Narasimhayya one of the most brilliant of the philosophy graduates of the College in recent years, obtained the degree of Ph. D., the only graduate so far to gain this distinction.

Regarding the financial condition of the College the Report says :—

The amount expended by the Council on the actual running cost of the School and College, during the financial year ended December 31, 1924 was Rs. 2,62,500, or, roughly Rs. 16,000 more than during the previous year. This large increase in expenditure is accounted for by a number of factors, *e.g.*, the natural operation of salaries' scales; the large amounts expended on Science apparatus and furniture, towards which no grant from Government was received or sanctioned even in the provisional form now current; the cost of repairs to buildings which it was impossible any longer to postpone; and the considerable loss due to adverse exchange. The increase in expenditure moreover, would have been much larger but for the fact that during the year a sum of approximately Rs. 6,000, being arrears of Government grant, was received. The Council regret that through the operation of these factors they have to report a deficit on the year's working of approximately Rs. 2,000. Such a situation calls for the most serious consideration as there can be no question that the financial anxiety which continues to menace the College must of necessity react upon its efficiency and influence. The Council would express the earnest hope that the Governing Board may see its way both to increase the number of Missionary Societies co-operating in the maintenance of the College, and at the same time to secure their support on a more favourable basis of contribution. In making this request, however, the Council are deeply sensible of the difficulties under which the Contributing Bodies are at present labouring, and would acknowledge with gratitude the continued enhancement of contribution which the majority of them have made to the College during the year. The Home Churches and Missionary Societies gave contributions which realised Rs. 60,750: fees amounted to Rs. 1,45,800: the Government paid grants totalling Rs. 47,300, whilst the sum of Rs. 1,600 came from miscellaneous sources. To the Governing Board and the Contributing Bodies the Council would express their sincere thanks for continued sympathy and support throughout a difficult year. They would also respectfully thank Government for a teaching grant of Rs. 40,063, and a special grant for the school of Rs. 1,454. It is a matter of regret to the Council that the Government teaching grant continues to decrease even in face of the great increase in the expenditure previously referred to, and they trust that this strain upon the management may speedily be removed by the allotment of an enhanced grant, which more adequately recognises the part which the College plays in the education of the Presidency. A comparison of the accounts for 1924 with those of the previous year shows that the contribution made by the management in 1924 towards the current expenses of School and College has increased by approximately Rs. 16,000. The Council are thus able to carry forward to 1925 a working balance of only Rs. 23,000, which, it is needless

to say, is quite insufficient for an institution with an annual expenditure of approximately Rs. 3 lakhs. Apart, however, from current expenditure, with which the report has so far been dealing, the gravity of the position becomes much greater when one turns to examine other College Funds. And here, as was the case last year, the serious debit balances (amounting to Rs. 19,138-5-11 and Rs. 12,784-14-9 respectively) in the College Park Hostel Building Account and the Malabar Christian College Account give ground for much anxiety. To clear these debits the Council would again appeal to the Governing Board for any special funds they may be able to secure.

Gifts to the Cooper Fund were received during the year from Mr. Maclagan Wedderburn: from an anonymous friend of the College: from the Rev. W. Macdonald; from Mrs Taylor: from Holyrood Abbey Sunday School: from the Henry Drummond Memorial Fund: from Mr. Alladi Krishnaswami Iyer and the Rev. Dr. E. M. Macphail. To these generous donors the Council express their deep sense of obligation. While the College has been enabled for some time to render assistance to deserving students by means of the Cooper Fund it has not had at its disposal any fund from which it could contribute towards religious organisations which are not connected with the College but which benefit its students. This want was in part supplied by the institution of a fund known as the Canon Sell Fund, named after one who has been an esteemed friend of the College for over half a century, and made possible through several generous contributions. The Council have been able to set apart a small sum as an endowment, and they would recommend the claims of the Fund to the liberality of those who have the highest aims of the College at heart.

As in former years the thanks of the Council are due to the Home News Trust which continued the supply of several periodicals to the College.

The Malabar Christian College has maintained throughout the year its steady record of progress and the thanks of the Council are again due to the Rev. F. N. Askwith for his able administration. In view of the fact that in the normal course the responsibility of the Council for the management of the Malabar Christian College would cease at the close of the academic year 1925-26, the Council were called upon in the course of the year to give serious consideration to the future of the College. The Council felt that at this stage any thought of renouncing their responsibility would be disastrous to the cause of Christian education and influence on the West Coast, but at the same time they were convinced that the College could not be continued in its present inadequate accommodation for any length of time. The buildings required for the satisfactory working of the College are estimated to cost one lakh of rupees. The Council decided to request the Governing Board to appeal to the contributing bodies for a sum of Rs. 25,000 towards this expenditure on the understanding that a similar sum was raised locally, these sums together with the amount received as Government grant providing the total capital expenditure. They also appealed for an annual grant of Rs. 8,000—the additional sum estimated as necessary to meet the annual expenses of management. The Council earnestly trust that these appeals will receive the sympathetic consideration of the Governing Board.

The services in College Church on Sundays during the College terms were maintained. The hostels continued at work throughout the year. Signs of the rapid lessening of the need for hostels reserved for members of a particular caste or community continue to multiply. The members of the Madras Students' Home readily agreed to allow some of the vacant places to be filled by Christians, messing arrangement being made for these in the Fenn Hostel across the road. In the beginning of the year the rules of all the hostels were collated and revised, and a common book of General Rules was prepared, dealing with all matters in which it seemed possible to establish uniformity. From July onwards all the hostels have had the services of a medical officer, who visits each hostel once daily, and oftener if required, prescribes for the sick, and reports to the Principal and the Superintendent.

The College Magazine has extended its circle of readers since the beginning of the academic year by the issue of a students' edition. The students' edition is really a reprint of the regular Magazine, struck on thinner but good paper, while its cost is materially less. A slight addition to the fees of students and the securing of more advertisements have made this possible with no burden on the College. The Editor reports that he discerns a widening interest in the Magazine, evident in the increasing number of good contributors. The Rev. C. W. Gilkey, the Barrows lecturer, remarked that he found the Magazine was being read by the leaders of thought all over India.

After pointing out the lack of interest from which the Debating and Literary Societies are still suffering to some extent, the Report proceeds to draw, attention to the good use that has been made of the College Libraries. To facilitate supervision the Honours Library has been removed downstairs and is now housed beside the rest. Dr. Macphail presented a useful collection of books and the Library has been enriched by many volumes from Mr. Macartney's shelves, partly by gift, partly by purchase. The Athletic Association has functioned with a fair measure of success throughout the year under review. The College Company of 5th (Madras) U. T. C. had a very successful year. A very eager body of recruits joined in July, aud with their assistance the Company is determined to maintain its good record. After making brief review of the work of the High School the Report concludes as follows :—

The University of Madras which was reconstituted in 1923 so as to secure closer co-operation of the Colleges in the City and the organisation of the Mofussil Colleges into groups with a view to the formation of local Universities has been gradually coming into being during the year under review. The first meeting of the new Senate was held on the 4th April 1924. On the second day of its session the draft conditions for the affiliation of Colleges were submitted, and an amendment to one of them was proposed which, if carried, would have had the practical effect of debarring from affiliation a College that made definite religious instruction an integral part of its curriculum. In the debate which followed, the argument used by more than one who opposed this amendment was that Colleges should be left to decide this matter for themselves, so far as the University was concerned, but that the question might fittingly be raised in the Legislative Council as to whether grants should be given to Colleges which are of this type. The amendment was defeated in the Senate, 24 members voting for, it and 57 against it. It now remains to be seen what action the Legislative Council will take In 1921 a resolution similar to the Senate amendment was lost by a large majority but a similar resolution was given notice of at a recent meeting and, though not debated for want of time, will doubtless be brought up again. The Council will maintain the position it has held on this question ever since the College was founded, though it would keenly regret the curtailment of its work which the withdrawal of the Government grant would occasion.

The new University is seeking to exercise a closer supervision over the residence of students. The Council welcome this action which is a following up of the work of Dr Miller in establishing hostels for students of the College. It is hoped that when the College is moved to a new site it will be possible to provide more fully for the residence of the students. Meanwhile students have been assigned to the professors with whom they have chiefly to do in their College studies for tutorial help and disciplinary supervision. The tutorial system has thus been put into operation throughout the whole College, and is valued by the staff as bringing them into still closer contact with the students. They recognise how important it is to have this intimate relation if the ideals of the College are to be fully realised.

In their fullest sweep these ideals embrace the bringing of life and character under the sway of the teaching and influence of Him whose name the College bears. During almost nine decades the College has been privileged to stand for these ideals and thus to make a definite contribution to the growing life of South India, through an education which moulds the mind in its search for truth, and quickens the conscience in its fight with evil, and stirs the spirit in its longing for God. The Council recognise with gratitude that these aims have been steadily kept in view during the past year, and that the endeavours to realise them have not been in vain. It is no small privilege that through a year of patient toil the College has been enabled to help towards the realisation of the Master's prayer, 'Thy kingdom come. Thy will be done in earth as it is in heaven.'

THE HON'BLE SIR A. P. PATRO,
Minister for Education.

M.R.RY. S. V. RAMASWAMY MUDALIAR, AVL.,
Director, Imperial Bank of India (Madras.)